

PSYCHOLOGICAL ABSTRACTS

VOL. I, No. 5

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GENERAL

983. **Boring, E. G.** The construction and calibration of Koenig cylinders. *Amer. J. Psychol.*, 1927, 38, 125-127.—Detailed directions are given for the manufacture and calibration of the cylinders used in the production of very high tones.—*G. J. Rich* (Institute for Juvenile Research).

984. **Fernberger, S. W.** An improved apparatus for actuating tonal cylinders of the Koenig type. *Amer. J. Psychol.*, 1927, 38, 120-124.—By mounting the cylinders on a turning-top table and actuating them by the fall of an electro-magnetically released ball, the various factors which influence the perception of sound may be kept constant.—*G. J. Rich* (Institute for Juvenile Research).

985. **Klein, E., & Rouse, G. F.** Methods for exciting and for calibrating tuning forks. *J. Opt. Soc. Amer.*, 1927, 14, 263-286.—The article is a summary of available information with a good bibliography. It is shown that continuous excitation may be accomplished by: (1) electro-magnetic, make-and-break drive; (2) magnet energized by alternating or externally interrupted current; (3) thermionic vacuum tube drive which is shown to possess distinct advantages—large frequency range, constancy, reliability, availability of many frequencies from a single fork; (4) piezo-electric action of Rochelle salt for high frequencies. The effect of amplitude, temperature, damping, weight of base, position of prongs, and constants of vacuum tube circuit on the frequency of the fork is discussed. Six approximate and four precise methods of calibration are described.—*D. B. Judd* (Bureau of Standards).

986. **Masuda, K.** Four meanings of the study of behavior in psychology. *Jap. J. Psychol.*, 1926, 1, 110-118.—Behavior has been studied by psychologists in four different meanings: (1) as suggestive datum to inner consciousness (Wundt); (2) as a basis of inference of conscious phenomena; (3) as descriptive datum of mental content and function; (4) as an aspect or phenomenon of mental processes (Watson). The author rejects the extreme behaviorism of Watson, which ignores conscious processes, and does not endorse a modified behaviorism which still posits behavior as the central object of psychological study. Study of behavior should be strictly psychological, and since it emerges from experience, experiential processes *per se* must be a fundamental object of psychological study.—*J. G. Yoshioka* (California).

987. **Miller, E.** *Types of mind and body.* New York: Norton, 1927. Pp. 95. \$1.00.—Under the heading "Morphology" the author cites Kretschmer's classification of bodily forms into the Pyknic and Asthenic, the Dysplasias being considered as an offshoot of, and the Athletics a subvariety of, the Asthenic. The physical characteristics attributed to each form are given. Klaatsch's anthropological, Crookshank's ethnological, and MacAuliffe's zoological theories are mentioned as possibly throwing light for some upon the genesis of types. The author's supposition is that "form is determined by metabolic tendencies in each of the main groups, and that there is some neuro-endocrinic balance which determines their form and plays a part in their type of reaction to environment." Under the heading "Physiological Background" are correlated the broad tendencies of endocrinology. Connection is made with the chapter on morphology by pointing out a few parallelisms between certain of the body types and types

associated with particular glandular conditions. The author supports with a number of facts his division of the vegetative nervous system into the sympathetic and automatic systems, an increased activity in either of which has important effects on the organism. Under the heading "The Physiological Aspect", a description is given of the processes of reaction type formation. The two main types of individuals, classified according to their reaction to the two polar types of mental disorder, are discussed in three aspects: their psychological picture, the psychodynamics involved in the formation of their character, the relations between them and the morphology and physiology of Kretschmer's type forms. Under the heading "Cross Currents" are discussed the factors that make for variation in types of body and mind. The characters of Bunyan, Byron, and Milton are described as illustrative material.—*M. Goodrie* (Clark).

988. **Twitmyer, E. B., & Fernberger, S. W.** Some new laboratory and demonstrational apparatus. *Amer. J. Psychol.*, 1927, 38, 113-119.—Four pieces are described: a tachistoscope suitable for demonstration before a large group; a speed reducer for kymographs of the motor driven type; a useful and cheaply made inductorium; and a tubular grille for demonstrating the perception of heat from the fusion of cold and warm stimuli.—*G. J. Rich* (Institute for Juvenile Research).

[See also abstracts 1033, 1047, 1051, 1057, 1063, 1075, 1108, 1120, 1173.]

SENSATION AND PERCEPTION

989. **Anderson, J. E.** On the inhibition of the differential threshold in accordance with Heymans' law. *Amer. J. Psychol.*, 1925, 36, 461-463.—The differential threshold for light-stimuli in the presence of a third inhibiting stimulus was measured (under dark adaptation) by the method of continuous change. The results show that the differential threshold varies, within the range of stimuli studied, with the intensity of a concurrently presented visual stimulus.—*G. J. Rich* (Institute for Juvenile Research).

990. **Averill, H. L., & Weymouth, F. W.** Visual perception and the retinal mosaic. II. The influence of eye-movements on the displacement threshold. *J. Comp. Psychol.*, 1925, 5, 147-176.—By a clever use of apparatus throwing light by a 1000-watt bulb in a balopticon through finely perforated aluminum disc holes onto a frosted glass screen, with an object interposed between the diaphragm and the lamp in the shape of an U moved in an elliptical course by a motor-driven eccentric and carrying clamped to itself objects to cause offsets in profile, the investigators verified their theory that the superior delicacy of visual perception as against the fineness of the retinal grain of rods and cones is to be accounted for by the retinal mean local sign, which doctrine rests upon three facts: the mutual effects of adjacent retinal elements, the plateauing or averaging of stimulations on the retinal mosaic by slight eye-movements, and the binocular combining of the two retinal patterns. Five experimental results are presented to substantiate the theory.—*H. R. Crosland* (Oregon).

991. **Banister, H., Hartridge, H., & Lythgoe, R. J.** The influence of illumination on visual acuity. *Proc. Opt. Conv.*, 1926, 551-561.—The experiments were undertaken with two purposes in view: (a) to find test objects and methods of testing for visual acuity which are applicable to a large number of observers simultaneously and which do not cause visual fatigue; (b) to ascertain by their means the effect of intensity on the perception of fine detail by observers with normal sight. The capital letters of the alphabet were used as test objects. Two methods of experimentation were employed. Method 1, the number of mis-

takes made in the recognition of the letters with prolonged observation was ascertained, the letters subtending at the eye only a small angle. Method 2, the number of mistakes, made with brief observation (1/50 sec.) of letters subtending at the eye a considerable angle, was ascertained. The authors concluded that increasing the illumination has the effect of increasing the resolving power of the eye for these test letters, enabling the eye to recognize them when they subtend smaller angles. An increase in illumination from 1 to 100 foot-candles was found to approximately double the resolving power, and there was a steady rise in resolving power up to 100 foot-candles. The experimenters found that the two methods of investigations gave results that correlated highly, and suggested that method 2 furnishes the most practical method of studying visual acuity.—*J. R. Liggett* (Clark).

992. **Barker, W. B.** The problem of the anisometrope. *Proc. Opt. Conv.*, 1926, 562-569.—Anisometropia is defined as the condition in which there is a difference in the amount of refraction in the two eyes. The position of retinal images in this condition is discussed, and methods of measuring and of correction are suggested. The author is an optician, and approaches the problem from this viewpoint.—*J. R. Liggett* (Clark).

993. **Bianchi, L.** Contributo alla conoscenza del processo percettivo. (A contribution to the knowledge of the perceptive process.) *Actes d.5. Cong. int. d. Phil.* (Naples, 1924).—The human brain has as a fundamental law the power to assimilate natural energies and to transform them into psychic energy. The concept of sensation may be defined as "the process by which notification of the modified ego is given by the only external component of the perception." The author says that the functional localizations in the cerebral cortex are a fact already known to science, and he speaks of the intercommunication between the different cerebral areas, from the integration of which results the unity which forms the personality (intelligence, sentiment, and consciousness). He reasons from this that the perceptive process is coextensive with the sensory cortex and advances with the perfecting and functional differentiation of each sensory area by the more numerous relations with other sensory areas and, thanks to language, with the field of mental synthesis and the logical process.—*G. C. Ferrari* (Bologna).

994. **Bichowsky, F. R.** The mechanism of consciousness: pre-sensation. *Amer. J. Psychol.*, 1925, 36, 588-596.—The first conscious effect that can be traced to a stimulation of the sense-organs is not the full fledged classical sensation, but a feeling that does not possess spatial or temporal quality. These feelings or pre-sensations cannot be described accurately. They have emotional tone and feeling quality, and possess intensity. Pre-sensation activity seems to be a necessary condition for percept activity. A given pre-sensation tends to stimulate a considerable range of percepts, usually of its own modality, but may fail to do so under a variety of circumstances. When two or more end-organs are stimulated together, there is but one joint pre-sensation.—*G. J. Rich* (Institute for Juvenile Research).

995. **Blumenfeld, W.** Das Suchen von Zahlen in begrenzten ebenen Felde und das Problem der Abstraktion. (The search for numbers in limited plain fields and the problem of abstraction.) *Zsch. f. angew. Psychol.*, 1925, 26, 58-107.—Processes of searching are determined processes which are not directed toward the inducing of a perceiving apprehension of an object which is itself present, of whose position the searching person is not entirely aware, while the single object can be either one already known to him or one of such a kind that should be recognized on the ground of established characteristics already known to him. There are therefore transitions and inter-relations between search and abstraction processes. Not every abstraction presupposes a search; it can also be based upon

perceptible elements already apprehended, while the observer introduces a new point of view.—*P. Plaut* (Berlin).

996. **Brennan, F. M.** A report of three singing tests given on the tonoscope. *Psychol. Monog.*, 1926, **36**, 249-262.—A study of singing keynote, singing interval, and discriminative control of pitch based on the Seashore tonoscope. Test results show low inter-correlations. The significance of this test is discussed.—*F. A. C. Perrin* (Texas).

997. **Carmichael, L.** An evaluation of current sensationalism. *Psychol. Rev.*, 1925, **32**, 192-215.—The writer presents a statement and summary of the structural view of sensation based upon the writings of Titchener. Certain criticisms (those of Münsterberg, Talbot, Calkins, Boring and others) of this view are reviewed and summarized. The positions of the radical behaviorist, of McDougall, and of the configurationists, are mentioned as illustrative of the treatment of sensation by those who reject the methods of the structural school. In conclusion a biological view is set forth as the adequate one. The conception of sensation is of importance only as it aids in grasping the significance of the total organism living in its environment.—*P. T. Young* (Illinois).

998. **Clark, C. F.** Changes in refraction; from a study of case records during four decades. *Arch. Ophth.*, 1926, **56**, 52-65.—The infantile eye combines two opposing refractive states, a very considerable curvature myopia due to the lens and a still more considerable hyperopia due to excessive shortness of the eye ball. In old age, on the other hand, we find a more rigid sclera, an inelastic, less spherical lens, and optic media of imperfect transparency. It requires a very delicate adjustment of curvature and refractive index to the gradually increasing length of the antero-posterior axis if there is to be no impairment of the child's vision by the time his eyes have attained their adult size at the age of ten years. The author plots age against diopters of refractive error and gives graphs of some of the changes characteristic of ocular growth. These are shown to have considerable diagnostic and predictive value.—*C. W. Darrow* (Institute for Juvenile Research).

999. **Cobb, P. W., & Moss, F. K.** The fixational pause of the eyes. *J. Exper. Psychol.*, 1926, **9**, 359-367.—The pause of the eyes was measured in 9 subjects by having them fixate in the dark a luminous point *A*, then shift fixation to a point *B*, 20° to the right, and report what they saw at a point *O* midway between *A* and *B*. At *O* were 12 perforations arranged on the circumference of a circle 38 mm. in diameter 2.85 m. from the eye, which were illuminated one at a time by a rotating disc. The subjects' task, to report how many illuminated perforations were seen when fixation was changed, was difficult, but monocular vision made it easier. The time of the fixational pause was derived from the number of perforations seen and the speed of the disc; 1900 measurements, whose distribution was approximately normal, show this time to be about 150σ.—*F. A. Pattie* (Harvard).

1000. **Cobb, P. W., & Moss, F. K.** Lighting and contrast. *Trans. Ill. Eng. Soc.*, 1927, **22**, 195-204.—The following conditions were studied: (1) contrast between object and immediate background; (2) contrast and adaptation effects of working back and forth between fields differing in brightness; and (3) contrast between the working area and outlying areas within the field of vision. In (1) two ratios of contrast were used, 100:4 and 100:73; in (2) four differences in brightness of fields—20:5, 20:1, 5:1 and 1:0.5 ml.; and in (3) two working areas, 5.8 x 5.2 and 1 x 0.75°. The tests used were for (1) speed of vision; for (2) rate of comparison of pairs of letters for similarity; and for (3) threshold of discrimination of black dot in case of the larger working area, and precision of setting a movable pointer in case of the smaller working area.—*G. Rand* (Bryn Mawr).

1001. **Crosland, H. R., Goodman, M., & Hockett, A.** Anosmia and its effects upon taste perceptions. *J. Exper. Psychol.*, 1926, 9, 398-408.—An investigation of a subject with complete anosmia of a year's duration. Two control subjects were used. Taste sensitivity of the subject was found normal; it had been neither impaired nor (by compensation for the anosmic loss) made more acute; yet the subject's ability to name correctly food stimuli put into his mouth when vision was excluded excelled that of the controls when vision and smell were excluded. It is believed that this heightened perceptual ability is the result of practice in attending to and relying upon secondary cues. Bibliography of 27 titles.—*F. A. Pattie* (Harvard).

1002. **D'Albe, E. E. F.** Some new applications of selenium. *Proc. Opt. Conv.*, 1926, 884-893.—This paper discusses and describes a number of new optical methods, based upon the photo-electric properties of selenium. Among these are the use of selenium for astronomical purposes, for photometry, for the determination of extinction coefficients of glasses, for infra-red, visible, and ultra-violet spectroscopy, and for the mechanical counting of interference fringes. The author states that "it has been established that selenium is capable of discovering differences of luminosity of the order of 1/100 per cent. This is an accuracy from 50 to 200 times that of the eye, and should add very greatly to the delicacy of all photometric processes". A selenium photometer is described in the article.—*J. R. Liggett* (Clark).

1003. **D'Albe, E. E. F.** The optical analysis of sound. *Proc. Opt. Conv.*, 1926, 894-898.—The author describes a method for producing acoustic "spectra" showing the constitution of any composite wave-train of music or speech. The analysis is effected by means of a set of highly selective acoustic resonators, each consisting of a Helmholtz cylinder at the orifice of which is mounted a mica reed carrying a mirror at the free end. The mirror reflects a narrow beam of light onto a screen, and the exact location is obtained by means of a universal joint. "Spectrograms" of speech and music are obtained by moving a film at right angles to the line of spots, on the screen. The author states that this method gives a complete record of sound in regard to intensity, pitch, and duration, and with a complete set of resonators, a complete record of quality could be secured.—*J. R. Liggett* (Clark).

1004. **Dejean, R.** La perception visuelle. Etude psychologique de la distance. Les conditions objectives. (Visual perception. A psychological study of distance. Objective conditions.) Paris: Alcan, 1926. Pp. 310.—This volume contains in reality two parts which supplement each other: the psychological study of distance in vision, and the objective conditions of visual perception. The author explains the distant vision of images, and the relief through psychological conditions which determine the fixation of that distance in the visual field. It would be a question of a prospective activity of the mind, conditioning the efficacy of the exciting factor situated at a distance. Two bibliographies are added to the two parts of the work.—*M. H. Piéron* (Sorbonne).

1005. **Dewey, J.** The naturalistic theory of perception by the senses. *J. Phil.*, 1925, 22, 596-604.—Sense-perception tells nothing about the nature of perceiving as a term, but in each case the act and its peculiar consequences are modified by the traits of the organs and the means involved. Perception, though sense-organs do affect the produced properties, does not affect qualities of things perceived in their nature. This point is significantly in contrast with the epistemological theory of sense perception and may be said to be set forth under the name of the naturalistic theory. A question of fact lies behind the epistemological question and this question of fact must be decided. We have inherited a lot of difficulties due to implications from terminology. Epistemological arguments are often ambiguous, treating empirical things now as cause of qualities and now

as correlated groups. Then there is the mistake taken over from Locke that the first qualities perceived are independent and simple. Another misconception is one of spatial qualities and is a question of physics and not of epistemology. These misconceptions may not be all of the list of confusions and mistakes converting a naturalistic view into an epistemological one, but they are large contributing factors.—*T. R. Garth* (Denver).

1006. **Dimmick, F. L., & Scahill, H. G.** Visual perception of movement. *Amer. J. Psychol.*, 1925, **36**, 412-417.—A moving stimulus does not give a perception of movement different in kind from the illusory perception set up by two successive stimuli in different positions with proper time intervals. The two perceptions are distinguishable not as experiences one of which moves while the other remains stationary, but as two forms of movement that differ slightly. The corresponding process-patterns differ not in their essential form, but merely in the relative distribution of the various degrees of intensity within the patch of grey. Physical movement is not an element of the compulsory conditions of the perception of movement.—*G. J. Rich* (Institute for Juvenile Research).

1007. **Dumas, G., Lamache, A., & Dubar, J.** Variations de la tension artérielle rétinienne sous l'influence de l'émotion. (Variations of arterial pressure in the retina under the influence of emotion.) *C. r. Soc. biol.*, 1927, **96**, 159-160.—Emotion has constantly caused an increase of the arterial pressure of the retina for the two phases, the systolic and the diastolic; and this increase in the same person seems to be in direct relation to the cause producing the emotions.—*M. H. Piéron* (Sorbonne).

1008. **Farnsworth, P. R.** Atonic endings in melodies. *Amer. J. Psychol.*, 1925, **36**, 394-400.—When a brief melody ends other than in a tonic, which would be in the ratio of 2 or of a power of 2, an ending on the ratio of 3 is smoother and gives more finality than one in the ratio of 5, and this in turn is preferred to an ending in the ratio of 7. There seems to be little sex-difference in the ending-preferences.—*G. J. Rich* (Institute for Juvenile Research).

1009. **Fincham, E. F.** The changes in the form of the crystalline lens in accommodation. *Amer. J. Physiol. Opt.*, 1926, **7**, 469-521.—Description of the measurement of the radii of the curvature of both anterior and posterior surfaces of the lens and also of the movement which the apices of these surfaces make in accommodation. In two selected cases of men of the same age and of the same refraction, considerable differences were found. The results show that for a given amount of accommodation, whereas the lens surfaces in one case are more increased in curvature than in the other, their apices suffer less movement. Also the surface which was most altered in curvature showed the most pronounced hyperbolic form in both relaxed and accommodated conditions. The results tend to confirm the Helmholtz theory of accommodation.—*S. W. Fernberger* (Pennsylvania).

1010. **Galli, Arc.** Di alcune illusioni ottiche per associazione nei bambini normali e negli anormali. (On some optical illusions by association in normal and abnormal children.) *Pubbl. Univ. Cattol. Milano, Serie Prima*, 1926, **11**, 61-76.—Tests conducted with the pictures (images) of Gatti, Ebbinghaus, Lipps. The author has examined 100 children between 4 and 6 of a kindergarten and 100 abnormal ones between 9 and 15 in an institution for abnormal children. Of the abnormal ones he had measured (as a check) the mental age (Binet-Simon), and the degree of defect (de Sanctis). In the younger years and in the lowest stages of mental backwardness the illusion produced is reversed; that is, the element of the image which appears smaller to adults is not apprehended in the same manner. With increasing age, or with a diminution of the degree of deficiency, the illusion of the adult type tends to appear more frequently. In children and (in general) also with the abnormally intellectual, one observes the

process of assimilation more easily than in adults. With the advancement of the mental age one would pass from the process of assimilation to the processes of contrast; and this, according to the author, on account of the modification of the type of attention, which in children is of the diffused type and only with age obtains the capacity of concentration, a necessary condition for contrast.—*G. Corberi* (Milano).

1011. **Gatti, Al.** *La percezione dei rapporti spaziali nei complessi visivi.* (The perception of the relations of space in visual complexes.) *Pubbl. Univ. Cattol. Milano, Serie Prima*, 1926, 11, 81-191.—Experimental researches on the illusions in the perception of geometrical figures seen at rest and in motion. The visual impressions which meet in a complex are united by special determined relations. The author affirms that the space relations are perceived in such a manner that their characteristics are accentuated by it. The space-relations perceived as proximity are under-appreciated. These perceptions as distance are over-appreciated. The perceptions as likeness or unlikeness of extension appear more similar and more dissimilar. If the space-relations are undefined the greater distances are more accentuated, so that they form points of reference. When such space-relations appear in the parts of a complex one notices deformations in them. Showing to the person in successive phases the isolated parts, that is, those that are not deformed, and afterwards showing them as placed in the complex, that is, deformed, one has what the author calls "the deforming movement." The different modalities found in the perception of space-relations represent the normal way of perception in the visual complexes: they constitute "the least effort" (an economic law) in order to have immediately the perceptions and the knowledge of the characteristics of the visual complexes.—*G. Corberi* (Milano).

1012. **Giddings, F. H.** *Stimulation ranges and reaction areas.* *Psychol. Rev.*, 1924, 31, 449-455.—Behavior of any description—animal or human, individual, social, or societal—is a product of five factors, two of which are discussed: the range of stimulation and the reaction area. Some stimuli, such as the prick of a needle, are of a very limited range; and others, as the stimulation when a bucket of water is poured over one, are of a larger range. Some stimuli, as in the case of kitchen odors, affect a small group, and others, as in the case of a mill whistle, affect a large group. Still other "stimuli," as weather and climate, affect an entire population. In a similar manner the extent of a reaction area varies with such determining factors as the intensity and amount of stimulation, the homogeneity or heterogeneity of a group. Individual, social, crowd, and societal psychology are differentiated on the basis of stimulation range and reaction area.—*P. T. Young* (Illinois).

1013. **Goodsell, J. G.** *An experimental study of ocular and intelligence status of high school students.* *Amer. J. Physiol. Opt.*, 1925, 6, 504-513.—Combined a number of ocular tests with a consideration of the student's age, school grades and scores in the Terman Group Test of Mental Ability, Form A. The results would indicate that high intelligence and mental ability are not dependent upon perfect eyes. "It is just one more bit of evidence to show that intelligence is hereditary and not made." The author does not find an increase in the percentage of eye defects as the result of schooling as has been claimed so often in the past.—*S. W. Fernberger* (Pennsylvania).

1014. **Guild, J.** *A critical survey of modern developments in the theory and technique of colorimetry and allied sciences.* *Proc. Opt. Conv.*, 1926, 61-147.—The author defines colorimetry as the application of measurements to the visual sensations produced by light. Such measurements consist of comparisons of the sensations produced by different stimuli, one of which produces the sensation under investigation and the other of which is of a known character. Atten-

tion is called to the differences between observers, and the taking of the "normal" eye as the standard. In this survey the writer reviews the available information on matters relevant to colorimetric measurements, and endeavors to summarize what may be regarded as the best practice at the present time; and indicates the directions in which improvement is most urgently required, not only as regards colorimetric procedure as ordinarily understood, but also as regards auxiliary matters, such as the establishment of standards of known spectral energy distribution. The various sections of the subject are dealt with in the following sequence: properties of illuminants; spectrophotometry; the photometric properties of the eye (methods of heterochromatic photometry, visibility curve of spectrum, etc.); laws of color mixture (color geometry and color calculations; color measurement (various methods of colorimetry); standard conditions for colorimetry (field, size, brightness, "white" light); standard terminology.—*J. R. Liggett* (Clark).

1015. **Halverson, H. M.** The upper limit of auditory localization. *Amer. J. Psychol.*, 1927, **38**, 97-106.—With changes of phase, tones of high frequency move over a more limited area than do low tones. This decrease in the amount of movement with increase in frequency is at first rapid, and then less rapid for the very high frequencies. Localization to the right or left is possible, within this limited range of displacement, up to the upper limit of hearing. Median localization is extremely difficult, if not impossible, for tones above 3000 d.v. Greater lateral displacement accompanies varying differences in phase when tones are observed in motion than when they are observed at rest.—*G. J. Rich* (Institute for Juvenile Research).

1016. **Holladay, L. L.** Action of a light-source in the field of view in lowering visibility. *J. Opt. Soc. Amer.*, 1927, **14**, 1-15.—In the first part of this article, results of an experimental investigation of the action of a light-source in the field of view in changing the adaptation of the fovea of the eye, and in increasing the minimum perceptible brightness difference are presented. In the second part are given results of a study to determine whether a given light-source in the field of view is an advantage or disadvantage, together with a method for expressing visibility by an exact ratio.—*L. L. Holladay*.

1017. **Judd, D. B.** Apparatus for the control of stationary light stimuli. *Amer. J. Psychol.*, 1927, **38**, 107-112.—An apparatus is described in which a light pulse is produced whose duration and intensity, as well as the intensity of the surrounding field, are continuously variable. The rise from zero to maximum intensity and the subsequent cut-off of the pulse are very rapid.—*G. J. Rich* (Institute for Juvenile Research).

1018. **Knudson, V. O.** Hearing better in the presence of a noise. *Science*, 1925, **62**, 109-111.—Recent experiments show that, in the presence of a noise, otosclerotic hard-of-hearing persons do hear conversation better than persons with normal hearing, but that these same hard-of-hearing persons hear conversation less well in the presence of a noise than they do in the quiet.—*G. J. Rich* (Institute for Juvenile Research).

1019. **Kwalwasser, J.** The vibrato. *Psychol. Monog.*, 1926, **36**, 84-108.—Nature of the vibrato, studied by the photographic method. The vibrato is produced primarily by trained singers; to a certain extent it is subject to voluntary control; it is affected by placement, slightly by vowel quality, and by low tones.—*F. A. C. Perrin* (Texas).

1020. **Lasareff, P.** Über den Begriff der Empfindlichkeit in der Sinnesphysiologie. (On the concept of sensitivity in sensory physiology.) *J. f. Psychol. u. Neurol.*, 1927, **34**, 234-237.—The author has defined sensitivity as equal to the reciprocal of the stimulus threshold, $E = 1/J$. Fröhlich in criticism suggests that $E = 1/\log J$. The author contends that a proper value for E must be

susceptible to further mathematical treatment independent of the particular units of measurement used, and should always yield results in accordance with the usual sense of the term sensitivity. If $J_1 = 1000$; $J_2 = 100$; and $J_3 = 10$, then by the Fröhlich formula $E_1 = 1/3$; $E_2 = 1/2$; and $E_3 = 1$. If these measurements were made in terms of a unit 100 times as large, then $J_1 = 10$; $J_2 = 1$; and $J_3 = 0.1$. E_1 then $= 1$; $E_2 = \infty$; and $E_3 = -1$. Thus Fröhlich's statement yields values which are irrational, because they are contrary to the ordinary meaning of the term sensitivity, and in such operations as E_1/E_2 , etc., are dependent on the units of measurement. The author's formula is open to neither of these objections. Further, $E = 1/J$ keeps the complexity of equational expressions at a minimum, whereas Fröhlich's statement introduces great exponential complexity into many expressions.—*L. T. Spencer* (Yale).

1021. **Lindemann, F. A.** The main points of divergence between electromagnetic and quantum theory of light. *Proc. Opt. Conv.*, 1926, 17-23.—The author states that "in this paper all that is intended is to give a brief resumé of the position of the two rival theories of light, the undulatory and the emission theory, or the electromagnetic and the quantum theory; it is not claimed that a solution of the outstanding difficulties and discrepancies has been found or even indicated." The discussion is entirely from the viewpoint of physics, and arguments for and against each of the two theories are presented.—*J. R. Liggett* (Clark).

1022. **Löpfe, A.** Über Rorschachsche Formdeutversuche mit 10-13 jährigen Knaben. (On Rorschach form meaning experiments with 10-13 year old boys.) *Zsch. f. angew. Psychol.*, 1925, 26, 202-253.—Results of a study made on 40 pupils in the 4th to 6th grades of the primary school with the Rorschach original tests. The answers were compared qualitatively and quantitatively with those of adults and the reactions peculiar to children were distinguished.—*P. Plaut* (Berlin).

1023. **Luedde, W. H.** Mechanism of accommodation. *Amer. J. Ophth.*, 1927, 10, 15-32.—The apparent adequacy and simplicity of the Helmholtz theory of accommodation are the basis of its wide acceptance. Neither Helmholtz nor later investigators have proved the elasticity of the lens. Comparative data are presented showing that extra-lenticular action accounts for accommodation in all vertebrates lower than mammals. The fact is that Helmholtz' own statement, as translated, is an expression of reserve and uncertainty and that he was ready to concede the correctness of Cramer's and Donders' explanation, save for the fact that the shape of the vitreous under pressure showed that it did not obey the laws of hydrostatic pressure. This objection is invalid in that we know that the vitreous is not a liquid but a true tissue, and, therefore, not bound by the laws of hydrostatics. Further, the lens is not a homogeneous mass, but contains a firm and resistant nucleus in a softer cortex. Accommodation is effected by the traction of the ciliary fibers upon the choroid causing forward pressure of the vitreous, and consequent change in the shape of the lens. Effects of drugs on the positions of lenses with the zonuli of Zinn defective on one side are offered as additional evidence.—*C. W. Darrow* (Institute for Juvenile Research).

1024. **Lyon, E. P.** Talks on physiological optics. Lecture 2: light. *Amer. J. Physiol. Opt.*, 1926, 7, 615-638.—Rather elementary description of the physical facts of light as a basis for visual perception—the rate of propagation, the form of energy, rectilinear propagation, reflection and refraction are emphasized. The facts of reinforcement and interference are treated.—*S. W. Fernberger* (Pennsylvania).

1025. **McFadden, F.** Some further investigations on the problem of the lag of accommodation. *Amer. J. Physiol. Opt.*, 1926, 7, 601-614.—Critical investi-

gation of skiometry methods especially with the source of light to be employed.—S. W. Fernberger (Pennsylvania).

1026. Metfessel, M. **Technique for objective studies of the vocal art.** *Psychol. Monog.*, 1926, **36**, No. 1, 1-40.—Descriptions of new and adapted technique for the investigation of vocal art, with historical summary. Types of new and adapted types of technique include: (1) a phono-photographic device employing two phonelescopes; (2) phon-optical devices; (3) a device employing ear analysis of phonograph records. Samples, explanations, and applications are described.—F. A. C. Perrin (Texas).

1027. Michotte, A., & Galli, Al. **Richerche sulla sintesi sensoriale nel campo della sensibilit  cinestetica.** (Researches on sensory synthesis in the field of kinaesthetic sensibility.) *Pubbl. Univ. Cattol. Milano, Serie Prima*, 1926, **11**, 227-260.—The authors make use of passive movements of the arms in measuring their discriminatory threshold for change of position by means of an apparatus with two handles, which moves along the side of a ruler and stops at the order of the experimenter. The subject, blindfolded, keeps his hands on the handles and judges the displacements undergone. According to current conceptions the space between the two hands does not correspond to a sensitive surface, and only the points which limit this space can be perceived. But it is the opinion of the authors, according to their experiments, that the space may be phenomenally present in a kinaesthetic form. There exists a strong analogy between the visual perception and the kinaesthetic perception of the space.—G. Corberi (Milano).

1028. Morris, C. W. **An investigation of oculomotor reflexes in visual perception.** *Amer. J. Physiol. Opt.*, 1926, **7**, 522-541.—Experimental investigation of the different factors operative in the oculomotor reflexes in visual perception. The results show that in fusion or relative convergence the absolute amount of convergence is about twice that of the initial convergence. The stimulus was not sufficient to diverge the eyes beyond a position of parallelism. Fusion divergence and relative divergence are to be viewed as an inhibition of the action of the internal recti rather than a positive stimulation of the external recti. The relation between the ciliary reflexes of accommodation and the fixation reflexes of convergence seems to be well correlated with the distance of the test in convergence and not in divergence. Absence of torsion characterizes divergence more than convergence. There is no correlation between distance and torsion in convergence. In divergence the torsion varies inversely as the distance. The amount of deviation for the different subjects remains about constant. The author concludes that absolute convergence of visual axes is the factor which underlies the explanation of most of the relation observed between the different oculomotor reflexes.—S. W. Fernberger (Pennsylvania).

1029. Mull, H. K. **The acquisition of absolute pitch.** *Amer. J. Psychol.*, 1925, **36**, 469-493.—Average persons frequently possess absolute ear in some degree inasmuch as they can judge notes correctly, previous to training, in a greater number of cases than would be due to chance. The ability to judge notes correctly can be greatly improved by training, and the resulting improvement is largely immediate and is relatively lasting in its effects. A high degree of transfer of learning occurs when various organ-stops are used. The average person, when trained, has the same degree of ability as a "gifted" person. In making judgments of absolute pitch, a high degree of attention to the notes is more effective than a lower degree. The possession of absolute ear seems to depend simply upon the giving of attention to notes as phenomena, rather than to notes in their melodic or harmonic relationships. There is no objective evidence which necessitates the postulation of an attribute of quality, or tonality, which

recurs in successive octaves, and upon which all judgments of absolute pitch rest.—*G. J. Rich* (Institute for Juvenile Research).

1030. **Pattie, F. A.** **An experimental study of fatigue in the auditory mechanism.** *Amer. J. Psychol.*, 1927, **38**, 39–58.—The effect of prolonged stimulation of the auditory mechanism was studied by comparing the relative intensities of tones heard by the two ears before and after stimulation of one ear. The result of stimulation is fatigue, and a diminution of the intensity of the stimulating tone and of tones subsequently heard. The decrease in intensity is, under the conditions of the experiment, somewhat more than one difference limen and lasts for about 30 seconds. The fatigue-effect is non-specific, since the intensities of tones different in pitch from the stimulating tone are decreased by the latter. The degree of fatigue is dependent upon the intensity and the duration of the stimulating tone. The fatigue-effect persists when the experimental situation is so varied as to eliminate attentional factors, and appears to be physiological in nature.—*G. J. Rich* (Institute for Juvenile Research).

1031. **Peddie, W.** **Present problems in color vision: the laws of visual fatigue and of resultant sensation.** *Proc. Roy. Soc. Edin.*, 1926, **46**, 245–263.—Using a modified form of the equation expressing Fechner's law that for equal steps in sensation the steps of intensity must proceed in geometrical progression, the writer shows how the threshold value of the intensity of a light stimulus may be determined for given values of the stimulus. The experimental curves portraying this relationship approximate closely rectangular hyperbolas throughout the given range. It follows that the threshold value of the stimulus is directly proportional to the sensitivity; this may be said to constitute an expression of the law of fatigue. A psychological equation stating that the resultant sensation produced by three commingled lights is identical with the sensation produced by the single light is used as a basis for investigating quantitative aspects of sensation. Using a generalized form of this equation which is directly linear in the components of the observed stimulus, and inversely linear in those of any fatiguing stimulus, the cross connection of effects is accounted for; the inclusion of non-linear terms affords an explanation of the effects of strong fatigue discovered by Professor Frank Allen. The mathematically derived formulae are supported by experimental data.—*D. B. Nyswander* (Utah).

1032. **Peterson, J.** **A functional view of consonance.** *Psychol. Rev.*, 1925, **32**, 17–33.—Helmholtz explained consonance and dissonance on the basis of beats among the upper partial tones and later Krueger supplemented this work by pointing out the importance of difference tones. Professor Peterson's paper centers around the work of Helmholtz and Krueger but mention is made of Stumpf, Ogden, Watt, and others. The Helmholtz-Krueger view did not sufficiently stress the effects of habituation. Habituation is an important factor in a theory of consonance. Social habituation reaching from one generation to the next may be a factor in determining what intervals are perceived as consonant. Auditory elements at one time discrete may become unitary if repeatedly associated. Preliminary experiments are briefly presented.—*P. T. Young* (Illinois).

1033. **Shastid, T. H.** **An outline history of ophthalmology.** *Amer. J. Physiol. Opt.*, 1926, **7**, 568–600.—A summary of the remains on this subject from the Babylon-Assyrian Code of Hammurabi (B.C. 2250) to the 19th century. In the discussion of the more recent contributions, the invention of the ophthalmoscope, test types and the use of drugs is emphasized.—*S. W. Fernberger* (Pennsylvania).

1034. **Simon, C.** **The variability of consecutive wave-lengths in vocal and instrumental sounds.** *Psychol. Monog.*, 1926, **36**, 41–83.—(I) Technique and method for the study of pitch fluctuation. The time-line and wave-length methods are described and compared. In the time-line method, the number and

fraction of vibrations occurring within a hundredth of a second are counted and then multiplied by 100; in the wave-length method, employing the tonoscope, waves are measured and translated into pitch. (II) Fluctuation in pitch measured in terms of variability of wave-length. There are no tones of constant pitch in either vocal or instrumental sounds; trained voices differ from untrained chiefly in greater periodicity of fluctuations; eight sources of pitch, vocal and instrumental, are ranked in order of increasing pitch fluctuations.—*F. A. C. Perrin* (Texas).

1035. **Travis, R. C.** A phenomenon in vision similar to refractory phase. *Psychol. Monog.*, 1926, **36**, 1-17.—A comparison between the refractory phase of the spinal reflex and the time interval between the perception of a visual intensity at about the observer's threshold and the ability to perceive a second intensity of the same brightness. The refractory phase in vision is more complex than the spinal refractory period. Among the factors involved and studied are dark adaptation, intensity of stimulus, and length of refractory period.—*F. A. C. Perrin* (Texas).

1036. **Travis, R. C.** The diagnosis of character types by visual and auditory thresholds. *Psychol. Monog.*, 1926, **36**, 18-37.—The auditory and visual methods of threshold discrimination in two opposed groups, the psychoneurotic and the schizophrenic. A contingency coefficient of .82 was found between a lowered auditory threshold and the psychoneurotic, and a raised auditory threshold and the schizophrenic. A coefficient of .72 was obtained between a lowered visual threshold and the neurotic, and a raised visual threshold and the schizophrenic. Change in the two thresholds during reverie is a function of the individual's reaction to the experimental conditions. The reliability of the tests is discussed.—*F. A. C. Perrin* (Texas).

1037. **Vogt, H. C., & Grant, W.** A study of the phenomenon of apparent movement. *Amer. J. Psychol.*, 1927, **38**, 130-133.—When two discs of light are exposed successively, the experience of optimal movement from one to the other occurs more frequently when the two stimuli are of the same color than when they are of different colors. The experience of a streak between the two stimuli, whose color depends upon the color of the stimuli, seems to be a constant factor in the movement phenomenon.—*G. J. Rich* (Institute for Juvenile Research).

1038. **Wolfe, O.** Late fusion development in two cases of strabismus. *Amer. J. Ophth.*, 1927, **10**, 51-53.—In two cases of pronounced strabismus a tuck was made in the appropriate eye muscles and orthoptic and stereoscopic exercises were instituted. There was no evidence of fusion for four months in one case and for six months in the other. Continued effort resulted in both cases in stereoscopic fusion of Kroll cards, fusion of lights at a distance, and ability to do bar reading.—*C. W. Darrow* (Institute for Juvenile Research).

1039. **Zama, A.** La percezione dei complessi visivi ottenuti per fusione binoculare delle parti che li costituiscono. (The perception of visual complexes obtained by binocular fusion of the parts which compose them.) *Pubbl. Univ. Cattol. Milano, Serie Prima*, 1926, **11**, 195-212.—The author makes use of the optical complexes (images of Gatti, Zöllner, Hering, etc.) habitually seen with illusory deformations and resolves each into two groups of elements, each of which appears without deformation. Afterwards he presents to the person, stereoscopically, the two separated groups of each complex. The fusion of the two parts reconstitutes the complex and causes the illusion, just as when the entire image is seen naturally. It follows that the condition of the deformation is that the complex be perceived as such, that is, by causes inherent in the space-relations between the parts of the complex and independently of the retinal image.—*G. Corberi* (Milano).

[See also abstracts 983, 984, 985, 988, 1044, 1051, 1068, 1087, 1103, 1104, 1105, 1157, 1160, 1162.]

FEELING AND EMOTION

1040. **Banissoni, F.** In tema di anormali affettivi. (About affective abnormality.) *Arch. ital. psicol.*, 1926, 5, 94-109.—Synthetic review of the conception of affective abnormality, the progress of corrective pedagogy, and practical techniques relative to studies on abnormalities of character. The author assures us of the importance of psychological knowledge of man according to the views of Jaensch. He recalls that in Italy an unexpected interest in the care of the abnormal has just been observed, thanks to a recent law (Dec. 10, 1925) concerning protection and assistance for maternity and childhood. Attention is called to the researches on eidetics and the fundamental ideas of De Sanctis on child psychiatry. A full bibliography.—*M. Ponzo* (Torino).

1041. **Baxter, M. F.** An experimental study of the differentiation of temperaments on a basis of rate and strength. *Amer. J. Psychol.*, 1927, 38, 59-96.—An attempt was made to classify a group of persons into four temperaments according to the rate at which tasks were performed and the strength (quality or excellence) of the performance. For this purpose Baxter used a set of psychological experiments selected to include a great variety of responses, a group of physiological measures, and the answers to a group of questionnaires about personal habits. The 44 persons studied intensively do not fall into four sharply defined groups on a basis of the experimental scores, although there are a few cases which are consistent to both rate and strength. The physiological measures likewise give no evidence of types, and are not consistent with the experimental results. The rate and strength scores obtained from the questionnaires have the same characteristics as those obtained by means of the experiments. There seem to be indications of a common rate factor in all the experiments, as well as a common strength factor, but these factors do not seem to be related to temperament.—*G. J. Rich* (Institute for Juvenile Research).

1042. **Imada, M.** Color preference of school children. *Jap. J. Psychol.*, 1926, 1, 1-21.—1,170 (644 boys, 526 girls) of grades I-VIII, from 6 to 15 years old, in two schools in and near Kobe, Japan, were tested for color preference. Six Zimmermann colors, yellow, orange, green, blue, violet, red, pasted on square white cards were used. Younger children were tested individually, older ones in groups. The results show that the colors were ranked in the following order: blue, red, green, yellow, violet, orange. Between 8 and 9 years, and also between 12 and 13 years, a shift in color preference was indicated. Sex difference was markedly shown: girls prefer red, green, violet, while boys prefer blue, yellow, orange. Girls as they grow older tend to separate into two distinct groups, each having a preferred color of its own. Boys show no such tendency.—*J. G. Yoshio* (California).

1043. **Mizuguchi, F., & Aoki, S.** Color preference of adults. *Jap. J. Psychol.*, 1926, 1, 22-33.—173 adults (103 men, 70 women) between 20 and 30 years, 52 (32 men, 20 women) between 31 and 40 years, 24 (9 men, 15 women) between 41 and 55 years (249 adults in all) in Tokyo and Kyoto, Japan, were given color preference tests with 17 Zimmermann colors pasted on square grey cards. The majority of the subjects were students and teachers, the rest consisted of clerks, business men, and farmers. These colors were ranked in the following order: blue, violet, cobalt-blue, green-blue, red, pink, green, yellow-green, crimson, green-yellow, white, scarlet, black, orange, grey, yellow, orange-yellow. As to sex difference, the first five colors most preferred by men are blue, cobalt-blue, green-blue, violet, pink; five colors most preferred by women are violet, red, green-blue, cobalt-blue, blue. In regard to the effect of age on color preference, men of 20-30 years favor the blue and red groups most, green next, yellow least. Between 30 and 40 there is in general no change, except that red and green go

down in ranking slightly, while the yellows go up. Between 40 and 55 years the greens and yellows go up, while the red group goes down decidedly. White, black, and grey show no constant shifting depending on age. Women between 20 and 30 years rank high the red, green, and blue groups; the yellow group low. Between 30 and 40 the yellow group gains favor, while red, cobalt-blue, black, and other brilliant colors lose favor. Between 40 and 55 brilliant colors are again preferred, while the yellow group is disliked. The rankings of colors by men and women in these three age groups show the following correlations: young men with young, middle aged, and older women, .71, .57, .82 respectively; middle aged men with young, middle aged, and older women, .35, .36, .65 respectively; older men with young, middle aged, and older women, .38, .36, .75 respectively. These correlations show that young men agree fairly well in color preference with older women, but young women agree very slightly with older men.—J. G. Yoshioka (California).

[See also abstracts 1007, 1050, 1131, 1143.]

ATTENTION, MEMORY AND THOUGHT

1044. **Cramaussel, E. Images eidétiques.** (Eidetic images.) *J. de Psychol.*, 1926, 23, 1003-1010.—This is one of the experimental studies of eidetic imagery initiated by Jaensch of Marburg in an effort to secure an extensive statistical account of the phenomenon. The subjects were 9 young girls ranging in age from 14 years, 11 months, to 19 years, 7 months. The stimuli were pictures of "Little Red Riding Hood" in colors and an "Arab Woman"; the former lifelike, the latter conventionalized. The subjects observed the pictures in an effortless manner for varying periods of time (3-65 seconds), after which the pictures were removed and the subjects continued to look at the background, and described their experiences. Several of the subjects described what must be called a distinct kind of image. Care was taken to exclude the possibility of fraud and the behavior of the subjects did not seem affected by suggestion. There was no confusion with mental or after-images, which were clearly distinguished from eidetic forms. Nor could the experiences be called hallucinatory. Several characteristics of eidetic images emerge from the experiment. Such images are not evoked with equal facility by every object. Objects which impress consciousness vividly and easily are most effective. Eidetic images appear later than after images, usually requiring from 30 to 60 seconds to develop. Mental images may accompany, follow, or blend with eidetic imagery. The conclusion is that eidetic images are not genetically intermediate between mental and after-images, but that they are connected with a return of sensations incompletely effaced—a return determined, it may be, by some unconscious, but lively and affectively toned, mental image.—C. M. Diserens (Cincinnati).

1045. **Galdo, L., & Papa, A. Influenza dell' attenzione visiva e del lavoro muscolare sulla grafica cerebrale e sull' attenzione.** (Influence of visual attention and of muscular work on cerebral graphics and on attention.) *Attes d. 5. Cong. int. d. Phil.* (Naples, 1924).—During sensory visual attention important modifications take place in the cerebral circulation, while during muscular work and effort no characteristic or constant modification has been observed. This difference of results is evidently due to the greater work which the brain accomplishes during psychic activity than during a muscular effort. The modifications of cerebral circulation during visual attention are a demonstration of concomitant physiological modifications of the psychic processes which by their constancy demonstrate their necessity, even indispensability, to the fulfilment of the cerebral function.—G. C. Ferrari (Bologna).

1046. **Gatti, Al., & Vacino, G. M.** *L'immagine consecutiva nel bambino.* (Consecutive imagery in the child.) *Pubbl. Univ. Cattol. Milano, Serie Prima*, 1926, 11, 215-223.—Researches among 42 children between 6 and 12 years old in a Piedmontese rural school. In the preceding works of Kiesow and of Gatti it has been proved that with Italian children the lack of consecutive negative imagery is less frequent than the theory of Jaensch would make one suppose. The authors find eidetic consecutive positive imagery, in 4 children of 9 years old, to be 52%. According to some observations they advance the hypothesis that there is a transient stage in which the consecutive image is seen without color.—*G. Corberi* (Milano).

1047. **Gemelli, A.** *Le ricerche sull' attività del pensiero compiute nell' ultimo decennio e il loro significato per la psicologia generale.* (Researches on thought activity during the last ten years and their significance for general psychology.) *Actes d. 5. Cong. int. d. Phil.* (Naples, 1924).—The author affirms that too much importance has been given to mental associations in the formation of superior psychic processes. It is not that two representative elements join in order to form a new process; but two elements of consciousness are put in such a relation between themselves when something new "is discovered." To this new aspect of "discovery" is added an element of emotional character which in working directly in the construction of the new conception furnishes orientation of the thought.—*G. C. Ferrari* (Bologna).

1048. **Kiesow, F.** *I fenomeni eidetisi e la pretesa metamorfosi psichica.* (Eidetic phenomena of pretended psychic metamorphosis.) *Actes d. 5. Cong. int. d. Phil.* (Naples, 1924).—By numerous researches made among children from six to twelve years old the author has obtained results which confirm the conceptions of Jaensch and of Lindvorsky, namely, that in the very young child are found in a general way only images of eidetic character, that is, reproduced sensations and representations which conserve the character of reality.—*G. C. Ferrari* (Bologna).

1049. **Monget, M., & Gelma, G.** *Erreur judiciaire due à une concordance de témoignages erronés.* (Judicial mistake due to a concordance of erroneous testimonies.) *Ann. de med. leg., criminol., police sci.*, 1927, 7, 68-72.—A new instance of how little credit one is scientifically justified in giving to testimony. A dispute is followed by violence; three persons have witnessed the attack; the guilty one flees. A man is arrested whom the three witnesses recognize; two of them are very positive, one is less sure. The really guilty one, arrested later, confesses.—*M. H. Piéron* (Sorbonne).

1050. **Pages, L.** *Affectivité et intelligence. Etude psychopathologique.* (Affectivity and intelligence. A study in psychopathology.) Paris: Alcan, 1926. Pp. 207.—Researches which tend to prove the necessity of the intellectual phenomenon in the formation of every emotion and every sentiment. Part 1 is an examination in five chapters of the psychopathological arguments in favor of heterogeneity of the affective life and of the intellectual life (none of them convincing). Part 2 consists of a study of the affective phenomenon in depersonalization and the deduction that the intellectual phenomenon is at the basis of the affective phenomenon which is inherent in it. Finally, Part 3 is concerned with the examination and the existence of affective states which are unknown to the ego. In conclusion, if judgment is not the only cause of the affective phenomenon, it is at least its essential condition. A bibliography of about 100 titles concludes the work.—*M. H. Piéron* (Sorbonne).

1051. **Patini, E.** *Su di una presunta antitesi fra conoscenza e sentimento.* (On a presumed antithesis between cognition and feeling.) *Actes d. 5. Cong. int. d. Phil.* (Naples, 1924).—The author affirms that, contrary to what is admitted in psychology, repetition obscures and weakens, not only the feeling, but

also the process of feeling, perceiving and representing; and at the same time clarifies the object, namely, that which is felt, perceived, represented. There does not exist, therefore, any antithesis, because repetition may sometimes give more strength to things pertaining to cognition as well as to those of feeling, while sometimes it weakens both.—*G. C. Ferrari* (Bologna).

1052. **Pechstein, L. A.** *The whole versus part methods in learning: comparison and summary.* *Stud. Educ.*, 1926, No. 15, 181-186.—In learning poetry some form of the part method is more effective than the whole. The progressive and repetitive part methods seem to be the most effective of the modified part methods. Learners of high intelligence are able to apply more successfully the whole method than are those of lower intelligence.—*T. F. Hunt* (Clark).

1053. **Ponzo, M.** *Illusione nei nostri giudizi sul numero.* (Illusions in our judgment of number.) *Attes d. 5. Cong. int. d. Phil.* (Naples, 1924).—The judgment regarding a number of objects presented to our view when numeration is not possible is already illusively predisposed in a determined direction, by the particular and special form in which the objects are arranged whose number is to be considered; and this itself independently of the question of individual types. These illusory facts, not observed by other authors, have been studied by Ponzo, who has collected a great number of such instances, which he divides into ten distinctive groups.—*G. C. Ferrari* (Bologna).

1054. **Ponzo, M.** *Significato delle modificazioni respiratorie durante lo svolgersi dell'attività del pensiero.* (Significance of respiratory modifications during the development of thought-activity.) *Attes d. 5. Cong. int. d. Phil.* (Naples, 1924).—The author alleges results of experiences which show the constancy of the diminution of the respiratory quotient during the development of numerous forms of thought-activity. He believes that this extension of the expiration is due to the internal language activities, and he supposes the contemporaneous existence of elements of phono-motor representations which, in several forms of thought activities, easily escape introspective examination.—*G. C. Ferrari* (Bologna).

1055. **Stepanow, G.** *Aspetto psicologico del concetto.* (Psychological aspect of conception.) *Attes d. 5. Cong. int. d. Phil.* (Naples, 1924).—Psychology studies reasoning as a concrete psychical process which develops in given individuals in a given period of time. Conception is, psychologically, a complex process of a certain duration, formed essentially by numerous and different subjective reactions provoked in ourselves by a given conception or sometimes by an analogous word. The existence of the relative subjective reactions is proved in the cases where determining words are forgotten; then the subjective reactions in direct perceptions make us judge as wrong other words which come to mind. The process-conceptions formed essentially by subjective reactions constitute the true dynamics of our "stream of ideas." These dynamics lead us often to new creations and become the source of our creative, artistic, literary, and scientific production.—*G. C. Ferrari* (Bologna).

1056. **Williams, O.** *A study of the phenomenon of reminiscence.* *J. Exper. Psychol.*, 1926, 9, 368-387.—A study of reminiscence (the fact that an initial rise instead of a sharp decline in the forgetting-curve occurs in certain conditions) as a function of age and sex of subjects and of the kind of material. Meaningful material (poetry) was used with half the subjects, disconnected abstract words with the rest. The 4209 subjects were divided into 4 age-groups whose average ages were 9.6, 12.7, 16.2, and adult. A five minute learning period was used, and one written reproduction was required immediately after learning and another was required of various sections of the groups after 1-7 days. Reminiscence was shown only when poetry was used and only in the two younger age-groups, and it was greatest and of longest duration in the youngest group. The

subjects who learned the least showed the greatest reminiscence. The girls excelled the boys in learning ability and in the amounts retained; in the youngest age-group the girls showed reminiscence to a greater degree than the boys, and in Group 2 (12.7 years) only the section of girls showed reminiscence.—*F. A. Pattie* (Harvard).

[See also abstracts 988, 995, 1109, 1126, 1173, 1196.]

NERVOUS SYSTEM

1057. **Canavan, M. M.** **Elmer Ernest Southard and his parents; a brain study.** Cambridge: The University Press, 1925. Pp. 29.—A very unique comparative brain study, thoroughly typical of the many-sided scientist who is here the object of study. The late Dr. Southard had preserved the brain of his father seemingly with the purpose of having such a comparative examination carried out. Dr. Southard died in 1920 of a pneumonia of 50 hours' duration at the age of 43. His father, age 72, died of a malignant growth of the prostate in 1910, and his mother died from coronary sclerosis in 1921, age 76 years. The brain weights of the three, father, son and mother, were found to be closely similar, 1460, 1470, and 1477 grams respectively. Dr. Canavan ably presents tables and discussions of detailed measurements and comparisons. She reaches the conclusion that the son did not inherit his parents' anatomical brain pattern. Those who knew Dr. Southard only from his writings will be surprised to find that he did not have perfect health. He is quoted as saying, "Never have I felt perfectly free of a headache, not a throbbing, but a dull, faraway ache that keeps me feeling as always working in a mist that I have to disregard." The volume contains a short autobiographical statement written in August, 1917, and medical notes concerning certain symptoms. It will doubtless be looked upon as a pioneer study of importance. 6 plates and frontispiece.—*W. R. Miles* (Stanford).

1058. **Cooper, S., & Denny-Brown, D.** **Responses to rhythmical stimulation of the cerebral cortex. Preliminary communication.** *Proc. Roy. Soc. Lond.*, 1926, 100, Series B, 251-257.—Experiments of Francois-Franck and Pitres were repeated on three monkeys. The motor cortex was stimulated by a regular series of break shocks varying from 18 to 68 per sec. Simultaneous electrical and mechanical records of muscular contractions were obtained. With stimuli given at the rate of 68 shocks per sec. the contracting muscles responded for short periods with rhythmic tremor corresponding in frequency with that of the stimuli applied to the cortex. For rates less than 68 the frequency of stimulation was more evident in the muscular response. The transmission of such high rates from motor cortex to muscle and the presence of little after-discharge indicate a closer connection with spinal motor neurone than might have been expected. Six references.—*J. E. DeCamp* (Pennsylvania State).

1059. **Downing, A. C., Gerard, R. W., & Hill, A. V.** **The heat production of nerve.** *Proc. Roy. Soc. Lond.*, 1926, 100, Series B, 223-251.—Through use of a thermopile the heat produced by faradic stimulation of an isolated frog's nerve is measured. Greater heat is obtained than that found in previous work. About 90% of the total heat appears after cessation of stimulation. A prolonged phase of heat production lasting from 9 to 11 minutes follows an initial phase of little heat. The heat of the initial phase averages about 7.6×10^{-6} cal. per gm. of nerve per sec. of stimulation and the total heat about 6.9×10^{-5} cal. per gm. of nerve per sec. of stimulation. A careful and detailed description of apparatus devised and used is given. Thirty-one references.—*J. E. DeCamp* (Pennsylvania State).

1060. **Freeman, W.** The columnar arrangement of the primary afferent centers in the brain-stem of man. *J. Nerv. and Ment. Dis.*, 1927, **65**, 149-171.—This paper is a continuation of the general description. (See Abstract 780, April, 1927.) The fibers for light touch sensibility run mainly in the ventral division of the sensory root, a segment or two of the dorsal horn, and then to the dorsal column. The fibers subserving the function of touch (pressure) enter the ventral division and then pass into the spinal thalamic tract on the opposite side. Pain and temperature sensibility are usually transmitted together through the ventral division of the sensory root and through the tract of Lissauer and end in the dorsal horn. The fibers of the exteroceptive system presumably enter in the dorsal division of the sensory root and terminate in the pars intermedia. Kinaesthetic impressions are conveyed through the dorsal division of the sensory root and may go to the cerebrum through the dorsal column, or to the cerebellum by way of Clark's column. The entering roots of the cranial nerves are not so well defined and the data are given in some detail. Then the sensory columns are located and the exteroceptive column is discussed in detail. Two brief case histories and 13 figures illustrate this section of the continued article.—*O. W. Richards* (Boston Psychopathic Hospital).

1061. **Kappers, C. U. A.** The relation of the cerebellar weight to the total brain weight in human races and in some animals. *J. Nerv. and Ment. Dis.*, 1927, **65**, 113-125.—A review of the literature and tables of total brain weight, weight of cerebellum, and percentage of cerebellar to total brain weight of Weisbach, Fuch and Clapham are presented. In addition there are similar weights, made by the author, of 13 Dutch males, 12 Dutch females, and 22 Chinese. The percentage of the cerebellar to the total brain weight is about the same for the Dutch, Chinese, and Japanese. "If any difference exists, the weight is *perhaps slightly less* in the Chinese, especially in the Northern Chinese" (italics Kapper's). The technical difficulties of such studies and their bearing on the conclusions receive considerable discussion. The brain weights and percentages for 9 orders of mammals and 3 species of fish are given. Some relation is found between the habits of the animals and the proportions of the brains and cranial nerves.—*O. W. Richards* (Boston Psychopathic Hospital).

1062. **Kraus, W. M., & Ditto, M. W.** A method of measuring the cerebral and cerebellar cortical surfaces. *Arch. Neur. & Psychiat.*, 1927, **17**, 193-197.—A review of the literature that was searched for methods to determine this area is given. The authors state that the methods were not considered satisfactory, consequently the method which is here reported was devised. The problem in its simplest form is to determine the area or surface of irregular spheroid bodies. The procedures that were followed are recorded. The essential element in the method is the instrument that makes it possible to follow accurately an irregular line and record the length of this line. A description of the instrument is given. The method was applied to the guinea-pig's brain, and it was found that in this animal the surface area of the cortex is about 4,000 square millimeters. Work is now being done on the human brain.—*I. Rappoport* (Boston Psychopathic Hospital).

1063. **McDougall, W.** The hypothesis of inhibition by drainage. *Psychol. Rev.*, 1926, **33**, 370-374.—The author suggests ways in which the criticisms of the drainage theory by Dodge may be met. The excitation at each point of the axon becomes a condition for the excitation of the neighboring points, the author assuming that the energy liberated in each unit-section of the axon is in excess of that required for the spread of excitation. There is, then, a double process of transmission, similar to that of a train of gunpowder in a narrow tube from which the liberated energy can escape from one end only. There need be no decrement of energy which occasions the discharge at the distal end, if the gun-

powder analogy be valid for the axon. Dodge infers from his interpretation of the drainage theory that reflexes accompanied by voluntary reactions should be either totally inhibited or diminished as compared with those in which no such action occurs. Finding no such inhibition experimentally, Dodge regards this as evidence against the drainage hypothesis. McDougall replies that under the drainage hypothesis reinforcement no less than inhibition takes place, depending upon the synaptic arrangements concerned in simultaneous excitations of different paths. The phenomena of concentrated effort cry aloud for some interpretation in terms of neuron process, and the author suggests the drainage hypothesis seems to offer a satisfactory explanation. The fatigue typical of ergographic experiments implies an overflow of energy from the primary efferent channels as their outlets become increasingly blocked by fatigue—just such a flow as is postulated by the drainage hypothesis.—*H. Helson* (Kansas).

1064. **Pawlow, I. P.** *Type de système nerveux à prédominance des processus inhibiteurs.* (Type of nervous system characterized by predominance of inhibition.) *J. de psychol.*, 1926, **23**, 1012-1018.—Experiments on the conditioned reflex reveal marked differences in the nervous systems of dogs, which prevent the production of identical phenomena in different animals. Several types of nervous system appear to exist, one of which occurs in dogs which exhibit the behavior pattern of fear. A dog of this type exhibits a predominance of inhibitory conditioned reflexes, whereas in most specimens these are very labile. On the contrary, in this animal positive conditioned reflexes vanished in the presence of even mild fear stimuli. Violent fear stimuli, such as the circumstances attending a flood, banished the acquired reflexes for months. The animal passed into a quasi-hypnotic state characterized by extensive inhibitions. The conditioned reflexes were restored in the presence of a friendly experimenter, or even by the presence of his clothes near by. The introduction of elements recalling the flood situation banished the reflexes once more. Another method of re-arousing the conditioned reflexes of eating, etc., was by conditioning certain inhibitory reflexes, which by induction reinforce the processes of excitation. In the interpretation of these facts it seems that the phenomena depend upon laws of economy in the expenditure of neural energy. Phenomena of cellular inhibition are involved. In such individuals the cortical cells possess little, or unstable, reserve material. Fears, phobias and obsessions seem based on the predominance of inhibitive processes, due to weakness of cortical cells. Melancholy types, prone to defense reactions, fall in the same class. Finally, the favorable effect of the presence of a friendly experimenter or his olfactory substitute proves the existence of definite social reflexes and opens up new fields of inquiry.—*C. M. Diserens* (Cincinnati).

1065. **Rose, S.** *Vergleichende Messungen im Allocortex bei Tier und Mensch.* (Comparative measurements on the allocortex in animals and man.) *J. f. Psychol. u. Neurol.*, 1927, **34**, 250-255.—Comparison of the architectonic measurements of cortical areas in several animals and man is given. The sizes of various areas, particularly of those concerned in smell, show various ratios which increase approximately in the following ascending order: marsupials, insectivores, carnivores, prosimians, lower primates, and man.—*L. T. Spencer* (Yale).

1066. **von Sarbo, A.** *Über die Rolle der roten Kerne.* (The function of the red nuclei.) *Psychiat.-Neur. Woch.*, 1927, **29**, 17.—(Festschr. f. G. Olah.) Contrary to Rademaker (*Vgl. Monog. a. d. Geb. d. Neur. u. Psych.*, 44) the author, with Efinger and Cajal, assumes a connection of Goll's bundles (deeper sensibility) with the red nuclei, which he considers as organs of cerebral balance. Romberg's symptom in tabes is accordingly explained as "rubral ataxia." As a diagnostic symptom for this the author considers the so-called disturbance of bal-

ance (swaying backward) as hypotokinesia, when the head is turned backward while the feet are together and the eyes closed. In this connection, changes of pressure through swellings, which later on lead to spontaneous disturbances of balance and are clinically identical with basic cerebellar ataxia, may also be early traced, as is proved by a great number of autopsies. The author also refers frontal ataxia (callosal ataxia) to the red nuclei.—*W. Wirth* (Leipzig).

1067. **Wilson, G., & Winkelman, N. W.** Occlusion of the posterior inferior cerebellar artery. *J. Nerv. and Ment. Dis.*, 1927, **65**, 125–131.—Two cases of occlusion of the posterior inferior cerebellar artery are given in detail. The necropsy findings including study of the sections of the brain stem are given for one case. Authors believe the restiform body to be involved in addition to the usual findings.—*O. W. Richards* (Boston Psychopathic Hospital).

[See also abstract 1035.]

MOTOR PHENOMENA AND ACTION

1068. **Borchardt, W.** Gibt es nervöse Chemorezeptoren in der Dünndarmschleimhaut? Zugleich ein Beitrag über die Einwirkung der Psyche auf Tonus und Bewegung des Dünndarms. Nach Versuchen an Hunden mit Vella-Fisteln. (Are there nervous chemoreceptors in the mucous membrane of the small intestine? With a contribution on the action of the psyche on tonus and movement of the small intestine. Based on researches on dogs with Vella fistula.) *Pflügers Arch. f. d. ges. Physiol.*, 1927, **215**, 402–426.—A local reflex to weak sour solutions can be demonstrated in the intestine. Tonus and peristalsis are increased. The conduction is by means of the nervous system peculiar to the intestine itself. The reflex can be suppressed by novocaine applied to the intestine. The reflex is also directional, i.e., from oral end to anal, as is the reflex obtained by mechanical stimulation. Pleasing stimuli presented to the animal produce an increase in the tonus and peristalsis, while terrifying and anger-producing stimuli result in inhibition of the peristalsis and a decrease in the tonus. The regularity of these effects suggests their employment in a way similar to the conditioned reflexes of Pawlow.—*L. T. Spencer* (Yale).

1069. **Claparède, E.** La définition de la volonté. (The definition of will.) *Actes d. 5. Cong. int. d. Phil.* (Naples, 1924).—Will is the process which has the function of making possible an action which is momentarily suspended through the conflict of two groups of tendencies, giving the supremacy to the superior tendencies. This means that it is a process which solves a problem of finality by the victory of the superior tendencies.—*G. C. Ferrari* (Bologna).

1070. **Cooper, S., Denny-Brown, D. E., & Sherrington, C.** Reflex fractionation of a muscle. *Proc. Roy. Soc. Lond.*, 1926, **100**, Series B, 448–462.—After spinal transection stimulation of individual afferent nerves activates only partially typical flexor muscles of the hind leg of a cat. Spinal or decerebrate shock reduces, strychnization increases, the fractional size of the reflex obtainable from a given afferent nerve. Tributaries to a nerve trunk give rise to larger reflexes than the trunk itself. In the reflex control of a muscle each afferent nerve produces its particular fractionation of the total motor units proper to the muscle; some of the units of this particular grouping may be common to the group of motor units fractionated by other afferent nerves. Thirteen references.—*J. E. DeCamp* (Pennsylvania State).

1071. **Corberi, G.** Caratteristiche individuali e lavoro continuato. (Individual characteristics and continuous work.) *Arch. ital. psicol.*, 1926, **5**, 126–131.—Personal researches conducted in 1912 in making use of the method of additions of Kraepelin, have determined the result and curves made by extending mental

work over a certain length of time and in repeating it for several consecutive days. Each person that was examined (14 subjects) presented varieties of conduct revealing the individual characteristics as having a great influence on the result of the work, characteristics which the ordinary direct observation would hardly have shown in some cases and which none of the other research methods would have presented in a better way. For any of these cases which the author has been able to observe in practical life he has found strong conformity with the result of the tests. He concludes from this that the work-curve obtained by laboratory methods may ordinarily be employed in the psycho-technical applications.—*M. Ponzo* (Torino).

1072. **Corey, E. L.** The effect of forcing fluids upon survival after bilateral epinephrectomy. *Amer. J. Physiol.*, 1927, **79**, 633-640.—This investigator, using the oral method of administering certain fluids, Ringer's solution, etc., to bilaterally epinephrectomized cats, found that they survive the total extirpation from 4 to 8 days longer than animals to which there is no post-operative administration of fluids. Whether these fluids relieve the dehydration following the double operation, or function in a diuretic way by flushing toxic products out of the organism so as to prolong the duration of post-operative existence, is left undetermined.—*M. J. Zigler* (Wellesley).

1073. **Creed, R. S., & Sherrington, C.** Observations on concurrent contraction of flexor muscles in the flexion reflex. *Proc. Roy. Soc. Lond.*, 1926, **100**, Series B, 258-267.—Concurrent contraction of pairs of muscles flexing hip, knee and ankle of a cat, decerebrate and spinal transection, were studied through electric stimulation of different afferent nerves. The relative amount of contraction varies with the afferent nerve stimulated and is somewhat characteristic of the particular nerve. The afferent nerve possesses motor units having similar thresholds. "The executant entity in the reflexes is thus not this or that muscle but a composite collection of motor units made up from portions of anatomically separate muscles." Seven references.—*J. E. DeCamp* (Pennsylvania State).

1074. **Davenport, C. B.** Human growth curve. *J. Gen. Physiol.*, 1926, **10**, 205-216.—A new attempt to plot the human growth curve from conception to 25 years. For the antenatal portion the data of Streeter have been utilized. Postnatal weights up to 6 years are from Woodbury, and beyond that from Table B of Davenport's "Human Metamorphosis," 1926. The total curve shows only two outstanding periods of accelerated growth—the circumnatal and the adolescent. The first reaches its maximum at birth, has a theoretical range of 44 months, a standard deviation of 5.17 months, and a modal velocity of 10.2 kg. per year. The adolescent acceleration is less marked and more prolonged. Its range is about 10 years with a standard deviation of near 21 months and a modal velocity of 4.5 kg. per year. The two accelerations are superimposed on a general growth curve that has a velocity of about 2 kg. per year from 2 to 12 years and that extends from conception to the age of 55 years. Probably the pituitary gland activates the adolescent cycle and it seems quite likely that something which comes from the placenta accounts for the astonishing circumnatal growth.—*W. R. Miles* (Stanford).

1075. **Della Cioppa, A.** Metodo stroboscopico per l'esame e l'esercizio della giusta intonazione e tenuta della voce nel canto. Nuovi dischi fonogrammoscopici per le varie posizioni della voce. (Stroboscopic method for the examination and exercise of correct intonation and steadiness of the voice in singing. New phonogrammoscopic discs for different pitches of the voice.) *Attes d. 5. Cong. int. d. Phil.* (Naples, 1924).—According to the author the stroboscopic method applied to singing becomes for teacher and pupil a sure means of development in correct intonation and firmness of the voice and is a good means for

practising it. It also develops retentive capacity in the phonic muscle sense, as well as acoustic memory for the different notes of the scale.—*G. C. Ferrari* (Bologna).

1076. **de Sanctis, S.** *Istinto e incosciente.* (Instinct and the unconscious.) *Arch. ital. psicol.*, 1926, 5, 71-93.—Report of a critical analysis of the fundamental ideas of W. H. R. Rivers in their relations to the work of Freud on psycho-analysis and to the experiments of the English neurologist, Head. The author wants to point out the formidable influence of Freud on the modern psychopathologists and the difficulty of distinguishing in psychopathological theories about neuroses and psychoses that which belongs to Freud and that which cannot be attributed to him, or rather, that which is an imitation or deformation of his doctrines.—*M. Ponzo* (Torino).

1077. **Faris, E.** *The concept of imitation.* *Amer. J. Sociol.*, 1926, 32, 367-378.—Three types of so-called imitation exist: (1) a quick, unwitting type, in which already existing attitudes are released, as in mobs; (2) a slow, unwitting type, growing out of the redintegrative process, in which one takes the rôle of another and thus at times becomes like him, as in the acquisition of dialects or slow adoption of opinions and ideals; (3) conscious copying, which depends on the purposes or ambitions of the individual and is merely instrumental. All three mechanisms which produce imitation may be shown to result quite as often in behavior which is so unlike any model that imitation becomes an impossible assumption. Hence imitation is not an essential attribute of behavior, but a mere accident.—*E. A. Esper* (Illinois).

1078. **Fulton, J. F.** *Muscular contraction and the reflex control of movement.* Baltimore: Williams & Wilkins, 1926. Pp. xv + 644.—This book, in the author's words, is a study of "muscle as a means of motion rather than as a machine for transforming energy." It combines in a single volume two parts as follows: (1) "The nature of the contractile response of individual skeletal muscle fibers" and, (2) "The nature of the integrative control exerted by the central nervous system upon skeletal muscle fibers in the performance of movements and in the maintenance of postures." The conclusions and inferences of the volume are largely based upon the very extensive experimental work of the author. His indebtedness to his teacher, Sir Charles Sherrington, is especially noted. An historical introduction precedes the main body of the work. This section contains not only an admirable consideration of the rise of neural physiology, but is embellished by the reproduction of numerous illustrations taken from early works in this field. The following chapter topics indicate something of the scope. Part 1: Broad features of the electrical responses of skeletal muscle—excitation—chronaxy; the latent period of skeletal muscle; the nature and course of the isometric twitch; the summation of contractile responses in skeletal muscle; certain features of the responses of muscle to repetitive stimuli; the innervation of individual muscle fibers in relation to fatigue—the problem of the neuromuscular junction; the electrical responses of skeletal muscle during repetitive stimulation (tetani); the significance of the action current of skeletal muscle; the contractile process—résumé and conclusion. Part 2: the principles of interpretation of mechanical and electrical records of reflex responses; an analysis of elementary reflexes—the knee-jerk and the flexor reflex; excitatory reflexes in response to repetitive stimulation; central inhibition; the nature of the central excitatory and inhibitory processes; reflexes in response to stretch (myotatic reflexes); the mechanism and functional significance of the tonus of skeletal muscle; the lengthening and shortening reactions and the proprioceptive system; the coördination of antagonistic muscles—reciprocal innervation; the significance of the electromyogram in voluntary and in other forms of reflex con-

traction; the cerebellum; the nature of higher control. In an appendix is given an account of some of the more recent developments in the technique and apparatus for neuromuscular study. There is a bibliography of 1066 items, each of which is given in complete form. The volume contains both an author and a subject index.—*L. Carmichael* (Princeton).

1079. **Hammett, F. S.** *Studies of the thyroid apparatus. XLII. The rôle of the thyroid and parathyroid glands in the growth of the long bones.* *J. Exper. Zool.*, 1927, **47**, 95–115.—A study of the influence of thyroid and parathyroid deficiency on the development of the humerus and the femur of the white rat. Growth retardation is largely determined by the body metabolism rather than by any specific effect of the experimental deficiency.—*L. Carmichael* (Princeton).

1080. **Hermann, L., & Umrath, K.** *Über das Refractürstadium des Herzens.* (On the refractory phase of the heart.) *Pflügers Arch. f. d. ges. Physiol.*, 1927, **215**, 365–372.—The interval between a normal systole and one which follows relatively early after it may be taken as a measure of the refractory phase of the heart. This interval seems to be independent of the strength of the stimulus producing the preceding systole. A working hypothesis to explain this fact is offered tentatively.—*L. T. Spencer* (Yale).

1081. **Hesnard, A.** *La vie et la mort des instincts chez l'homme.* (Life and death of instincts in man.) Paris: Stock, 1926. Pp. 229.—The author, following the way pointed out by Havelock Ellis and Freud, attempts to base the sole vital interests of the individual on pleasure and pain, on delight and suffering, and he relates every manifestation of pleasure or of pain to the instinct which he defines as attractive force or repulsive force, revealing its existence in all circumstances concerning the vital aims of the individual. He designates these instincts as "affective instinct-tendencies," which, he says, utilize sentimental logic, which is only the means, while instinct is the end. By means of psychoanalysis he studies the evolution of this instinct. In the seven parts of his work the author presents the birth, growth, maturity and old age of the instincts, the affective metamorphoses of adolescence, the vicissitudes of adult instinct; and he arrives at the principle of the rehabilitation of instincts, declaring that "instinct is perhaps the only truth, the only certainty; everything else is derived from it." A small bibliography.—*M. H. Piéron* (Sorbonne).

1082. **Kakuo, A.** *On the slow pulse rate of the prisoners at the Toyotama penitentiary.* *Chugai Iji Shimpô* (Home and Foreign Medical News), 1923, No. 1045.—In 1920 a special study was made on a peculiar sickness from which the prisoners at the Toyotama penitentiary suffered periodically in the winter months. The major symptom was a slow pulse rate. The results of many physiological and medical tests indicated that the slow pulse rate was due mainly to malnutrition and partly to low temperature, solitary confinement, and inaction. The physiological systems of the prisoners seemed to have responded to these factors by general atrophy of bodily organs, including the heart, resulting in a slow pulse rate. Pustular dermatitis was also evident in many cases, due probably to a decrease of trophic influence of the nervous system.—*J. G. Yoshioka* (California).

1083. **Kleitman, N., & Crisler, G. A.** *Quantitative study of a salivary conditioned reflex.* *Amer. J. Physiol.*, 1927, **79**, 571–614.—Collins and Tatum have previously reported that a salivary conditioned reflex to daily injections of morphine may be established in dogs, and Pavlov has described a salivary conditioned reflex of a delayed type, in which the animal responds gradually with greater and greater delay until it finally responds after a delay "almost exactly equal" to the interval of time that separates the application of the conditioned stimulus

from that of the unconditioned one. Pavlov states that the delayed response is forthcoming "even if the animal manifested the tendency to fall asleep during the delay." The present investigators undertook to determine whether delayed salivary responses of an hour or two—intervals of sufficient duration to induce natural somnolence in the dog—can be conditioned by the injection of morphine. They have also attempted to describe the manner in which this reflex is established, broken down and reestablished. A salivary conditioned reflex was developed by daily injections of morphine, but the delayed conditioned reflex cannot be established if the conditioned stimulus is continued for 2 hours before applying the unconditioned one. This normal conditioned reflex was found to be incompletely developed at its first appearance; as Anrep reports, it is built up gradually. When the injections are discontinued, the extinction of the reflex also takes place gradually, varying more or less with the individual animal. The reconditioning of the reflex is accomplished in less time than the conditioning time required in the first instance, a result which Anrep also has reported. The establishment, extinction and reestablishment of the reflex resemble Ebbinghaus' results on learning, forgetting and relearning of nonsense syllables. Starvation is harmful to the course of the fully established conditioned reflex, or prevents its proper development, as Froloff has found.—*M. J. Zigler* (Wellesley).

1084. **Kühl, G.** *Untersuchungen zur Hormonwirkung der Nebennierenrinde.* (Investigations on the hormone action of the adrenal cortex.) *Pflügers Arch. f. d. ges. Physiol.*, 1927, **215**, 277-290.—Extracts of adrenal cortex, free from adrenalin, were found to diminish disturbances of muscle and breathing activity caused by extirpation of the adrenals. Adrenalin and various extracts of other organs failed to produce similar action. The cortical extract fails to affect the normal animal. A summary of the previous findings on the subject is given.—*L. T. Spencer* (Yale).

1085. **Peugniez, P.** *Cinématique de la main; la main du prestidigitateur.* (Cinema of the hand; the hand of the magician.) *Presse méd.*, 1927, **35**, 123-125.—The art of the magician is one that requires of the hand coöperation of all the qualities of which it is capable. These qualities are suppleness, precision, and especially harmony of movement. Rapidity is equally necessary, but it is not of the first importance, for in order not to arouse attention one must make only rounded, smooth and easy movements. The successes of the magician, says the author, are only the result of patient and persistent practice.—*M. H. Piéron* (Sorbonne).

1086. **Prokofiev, G., & Zeliony, G.** *Des modes d'associations cérébrales chez l'homme et chez les animaux.* (Modes of cerebral association in men and animals.) *J. de Psychol.*, 1926, **23**, 1020-1028.—The authors treat associations of a type more complex than those concerned in the conditioned reflexes studied by Pawlov. The plan of the experiments is as follows: A stimulus (A) is associated with another stimulus (B), the two excitations evoking no visible reflex. After an association is established between A and B, the stimulus B is associated with a third stimulus (C) evoking a visible stimulus. The problem is to determine whether A will now produce this same visible reflex, i.e., whether there is now an association between A and C. Four conditions were imposed on the subjects, viz., (1) silence on the part of the experimenter, (2) complicated association, (3) complete objectivity, and (4) a technique applicable to both human beings and animals. In practice associations were first established between the sound of a metronome and rhythmic pressure. Next the pressure was associated with the reflex retrogression of the arm produced by an electric current. The response to the metronome was then determined. Certain difficulties due to individual differences in subjects, the effect of anticipations or presuppositions,

etc., were encountered. The results, however, were positive. When, as a consequence of association with the electrical stimulus, the tactile association yielded a conditioned reflex, the same reflex was provoked by the metronome. This reaction was weakened by repetition. The conclusion is, that if A and B are associated, and B is then associated with C, provoking a reflex, A will also produce that reflex. It is probable that such complex reflexes and associations do not obtain for animals, a fact which may explain the absence of animal language.—*C. M. Diserens* (Cincinnati).

1087. **Russi, P.** *I riflessi provocati da stimoli olfattivi, come mezzo per scoprire la simulazione e la dissimulazione delle anosmie.* (The reflexes provoked by olfactory stimuli as a method for detecting simulation and dissimulation of anosmia.) *Actes d. 5. Cong. int. d. Phil.* (Naples, 1924).—Olfactory sensations, according as they are aroused by substances agreeably or disagreeably odoriferous, cause different respiratory reflexes; namely, increased amplitude of excursion, with a prolongation of the exhalation phase. In all the cases there has always been observed an increase of blood pressure, a heightening of the total volume of the pulse of the hand, and an inhibited salivary secretion.—*G. C. Ferrari* (Bologna).

1088. **Sargent, R. M.** *Rate of recovery from vigorous exercise of short duration.* *Proc. Roy. Soc. Lond.*, 1926, 100, Series B, 440-447.—The rate of recovery from standing-running exercise is obtained by determining the total amount of oxygen used during successive periods after cessation of exercise. Rate of recovery varies with the subject and with the vigor of the exercise. At the end of ten minutes after 30-60 seconds of vigorous standing-running recovery is about 90% complete; less rapid recovery continues for 10 or 15 minutes more.—*J. E. DeCamp* (Pennsylvania State).

1089. **Seashore, R. H.** *Studies in motor rhythm.* *Psychol. Monog.*, 1926, 36, 142-189.—Study of motor rhythm by means of adaptation of Seashore phonograph chronograph, and graphic recording device. The liminal discrimination of small intervals of sound is of less importance to rhythm than the supra-liminal proficiency in taking and retaining a muscular set of the pattern as a whole for purposes of reproducing it or comparing it with a second presentation. The use of partial and multiple correlations among psychophysical tests discloses a "basic rhythm" factor. Another general factor is kinaesthetic memory, and a third is "general muscular coordination." The test has a reliability coefficient of $.98 \pm .02$.—*F. A. C. Perrin* (Texas).

1090. **Shen, E.** *The observation of eye movements during reading.* *Chinese J. Psychol.*, 1926, 4, No. 1.—After a summary of historical development in the method of observing eye movements and a description of the photographic equipment at Stanford University, the author presents some preliminary results on the reading of Chinese in vertical and horizontal axes. Eleven Chinese subjects show an average duration of slightly more than .3 second per pause in vertical reading and slightly less than .3 second per pause in horizontal reading, and an average span of slightly more than 2 words per pause in vertical reading and slightly less than 2 words per pause in horizontal reading. Certain characteristic differences in the eye movement in the two directions are described and are attributed to differences in the muscular mechanism and in the forward shifting in vertical movement of the center of rotation of the eyeball.—*E. Shen* (New York).

1091. **Sinelnikoff, E. I.** *Über Hungerbewegungen eines Dünndarmabschnitts beim Menschen.* (On hunger movements in a section of human intestine.) *Pflügers Arch. f. d. ges. Physiol.*, 1927, 215, 427-430.—Observations carried on over several years on a patient, a portion of whose intestinal tract

had been exposed by operation, showed hunger contractions at the rate of 10 per minute and lasting for 20-25 minutes six months after the operation. The duration remained unchanged after 2 1/2 years but rest periods between contractions increased in length 50% during this interval. It is suggested that different species have characteristic rates of such contractions (dogs 12-14 contractions per minute). The contractions occurred for the most part segmentally rather than in a peristaltic wave throughout the length of the section. Tonus increased with the onset of the contractions. Large increases in intestinal juices and dilatation of blood vessels accompanied the contraction periods. Close correspondence was noted between subjective feelings of hunger and the occurrence and intensity of the contractions, although occasionally spontaneous reports of subjective hunger did not occur. Feeding the patient reduced the contractions and the intestinal juice secretion as long as the food remained in the stomach. Affective conditions produced temporary inhibition.—*L. T. Spencer* (Yale).

1092. **Sollier, R.** *Le temps de reaction à l'arrêt.* (Reaction time at arrest.) *J. de Psychol.*, 1926, 23, 980-1002.—Many aspects of reaction time have been investigated, but there are no prior studies of how a subject reacts when, in the midst of action, he receives a signal to suspend work. This signal may be positive, e.g., a sound, or it may be negative, consisting in the sudden cessation of a stimulus usually accompanying the given work. Data on behavior in such situations are important to industry, where such situations continually recur. Diverse kinds of sensory signals in both positive and negative form must be employed with the same individual, corresponding to the variety of conditions encountered in industrial tasks. The author considers three forms of work, viz.: (1) work with a rhythm imposed on the subject or involving a spontaneous rhythm; (2) arhythmic automatic work; and (3) voluntary work of varied character, neither rhythmic nor automatic. These are the typical ground forms of industrial behavior. Mosso's ergograph was used for the first type of work, a weight of 235 g. being raised while a metronome beat fifths of seconds. Type-writing from dictation illustrated the second type of work, strokes being recorded on a Marey tambour. Courtier's dexterimeter was used for voluntary work consisting of contour drawing. Reaction times were recorded on a Jacquet. Positive orders to arrest work were given by a Morse signal; negative orders by the cessation of an electric bell. The subjects were ignorant of the purpose of the experiments. Two subjects were used for rhythmic and voluntary tasks; one subject for arhythmic work. The author concludes that whatever the nature of the signal, arrest of movement occurs more slowly than initiation. It takes longer to stop than to begin. There is no difference between times of arrest produced by positive and negative signals. Arrest of movement is never abrupt. In rhythmic work, the nature of the movement, e.g., flexion or extension, seems not to affect the time of arrest. Detailed results are illustrated by numerous tracings.—*C. M. Diserens* (Cincinnati).

1093. **Wodak, E.** *Der Bárány'sche Zeigerversuch: seine physiologischen Grundlagen und klinische Methodik.* (The Bárány pointing experiment: its physiological basis and clinical method.) *Monatssch. f. Ohrenhk.*, 1926, 60, 1011-1089.—The effect of bodily rotation upon the accuracy of the pointing reaction has been used extensively as a basis for clinical diagnosis without any exact knowledge of its physiological basis. Both extra-labyrinthine and labyrinthine factors must be studied for an understanding of the phenomenon. Factors such as turning the head to one side, position of the eyes, the quickness of the reaction, and incidental stimuli are studied. The effects of rotation, of calorization, and a device for graphic registration of the reactions are described. Vertical pointing is found of only theoretical interest.—*C. W. Darrow* (Institute for Juvenile Research).

1094. **Zwemer, R. L.** An experimental study of the adrenal cortex. *Amer. J. Physiol.*, 1927, **79**, 641-665.—Cats survive the extirpation of one adrenal with no ill effects, but die following the removal of the second one at an average of 53 hours after the second operation. If the cortex of one adrenal is left intact with undisturbed blood supply, in the second operation the animal survives indefinitely. An accessory mass of pure cortical material in one animal enabled it to survive the double operation indefinitely. Removal of the thyroid glands prolongs the life of animals deprived of the adrenal glands an average of about 8 days. The oral administration of glucose has a similar effect.—*M. J. Zigler* (Wellesley).

[See also abstracts 1028, 1041, 1045, 1064, 1103, 1104, 1116, 1150, 1154, 1161, 1177.]

PLANT AND ANIMAL BEHAVIOR

1095. **Bouvier, E. L.** *Le communisme chez les insectes.* (Communism among insects.) Paris: Flammarion, 1926. Pp. 291.—An endeavor to analyze the mentality which animates communistic societies, that is, the powers which regulate and coördinate the acts of the individuals in these societies. The work has three parts: (1) organizations and habits of these different societies, the maternal societies (social wasps, bumble-bees, Meliponids, bees and ants), conjugal societies (the termites); (2) origin and evolution in time of communistic insect societies; (3) actual determinism of the social functioning in communistic insects (primordial character of insects, intelligence in isolated communistic insects, the return to the nest, the individual relations in these societies, the plastic individual activity in the social surroundings, and comparison between the communistic insect-societies and human society). No bibliography. 24 illustrations in the text.—*M. H. Piéron* (Sorbonne).

1096. **Crozier, W. J., & Pincus, G.** The geotropic conduct of young rats. *J. Gen. Physiol.*, 1926, **10**, 257-269.—If tropistic behavior is to be utilized for the ultimate analysis of the inner processes controlling conduct, rather complete mathematical expressions should be found for several different modes of response, as has been done for phototropisms. Experiments on the geotropic response were made on young rats of known genetic history during the period from the 12th day after birth to the time when the eyelids are opened. Such animals creeping on an inclined plane orient upwards until a certain quite definite angle with the horizontal is reached and then progress in a straight line. Orientation apparently depends upon the distribution of the animal's weight on the legs of the two sides of the body. Formulae are derived describing the orientation with considerable exactness.—*W. R. Miles* (Stanford).

1097. **Field, H. E.** The immediate effects of tobacco smoke on the activity of rats. *Univ. Cal. Publ. Physiol.*, 1926, **5**, 189-194.—Preliminary experiments from placing rats in an air-tight, well lighted chamber through which tobacco smoke from clay pipes is drawn by a pump. The rats are quiescent and the normal movements of the vibrissae are usually absent while they spend the seven minute period in the tobacco smoke. The rats were then transferred to some special activity recording cages and it was found that the smoked rats were definitely more active for a period of 15 to 45 minutes. This result occurs with regularity.—*W. R. Miles* (Stanford).

1098. **Hineline, G. M. W.** Color vision in the mudminnow. *J. Exper. Zool.*, 1927, **47**, 85-94.—The present experimental study of the power of association and color discrimination in the mudminnow (*Umbra limi*) is a continuation, under

more rigidly controlled conditions, of previously reported work. In the significant parts of the present experiments monochromatic lights of equal energy were used. Four equalized Wratten monochromatic gelatine light filters were employed. Infra-red was eliminated by means of a 10 per cent. solution of cupric sulphide in a glass cell 1 cm. thick, and ultra-violet by the glass in this cell and in the filters. The source of light was a 100-watt "Mazda" lamp. Training consisted in the feeding of the fish under one condition of light (for example, under the green Wratten light filter), and then, after some practice, they were offered wads of paper under another light, for example red. In the case cited after a few trials the fish learned to come for food under the green light and to avoid anything offered under the red light. They were also tested with the two lights presented simultaneously. By these methods the mudminnows were shown to be able to distinguish between the following lights: red, 660μ to 700μ and green (510μ to 550μ); red (as above) and blue (400μ to 450μ); red (as above) and yellow (560μ to 600μ); yellow (as above) and blue (as above); but probably not between blue (as above) and green (as above). On the basis of this evidence it is held that mudminnows have at least elementary color vision.—L. Carmichael (Princeton).

1099. Kuroda, A. **Mental life of a *Macacus* monkey.** *Jap. J. Psychol.*, 1926, 6, 148-174.—A female monkey, apparently *Macacus cynomologus*, of an unknown age and from a South Sea island, was bought from a dealer in Tokyo, and actively observed for 4 months. (1) Instinctive behavior: After excessive exercise or emotional excitement she suffers from diarrhea. When cornered, turns her back to the experimenter, head hanging down, in a stiff attitude. When first introduced to a male *Macacus*, was overthrown and bitten, but in a few days became so friendly with him that he was allowed to pick fleas on her body. Likes potato and carrots best. 30 c.c. of good sake (Japanese wine) was consumed with no apparent ill effect when given mixed with vegetables. (2) Perception: A systematic study was made only on taste. Likes sweet and sour; indifferent to salt; dislikes bitter. 3 c.c. of glacial acetic acid was accepted when the dilution was less than 2%. A contrast effect of sweet and salt was proven by giving 3 c.c. of sugar, salt, and quinine hydrochloride solutions in various dilutions. 0.5% sugar solution was not touched when given after water, but was taken when given after 1% salt solution. (3) Motor habit: This monkey is ambidextrous. An attempt to teach her to respond to one of the three colors red, blue, and yellow in a Yerkes multiple choice apparatus with five doors failed completely. A habit of responding to one of the end doors, 1 or 5, was formed. When 1 and 5 were both open, the habit of responding to the alternate door when the first door was wrong, could not be established. An offer of the pair 3 and 5 (center and end doors) resulted in the same failure. (4) Intelligence: The trick of getting a food-can, out of reach, by pulling an attached rope within reach was learned, when she was shown how by putting her through the act. When the food-can was placed farther away, so that a stick was necessary to reach the rope first, she failed to profit by being put through. Tool using was beyond her mental capacity. The male monkey failed to imitate the pulling-by-a-rope trick, when the act was repeatedly shown by the experimenter as well as by the female monkey. Both animals failed to get beans out of a can by inversion, when the act was shown by the experimenter. They succeeded in getting beans out of an ink bottle by inversion by a trial and error method. A box to be used as a stepping stone to reach food hanging high was utterly disregarded. A bucket with food hanging by a pulley mechanism, which drops to the ground when a ring at the end of the pulling rope is released from a hook on the wall, mystified the monkeys without solution. They pulled on the rope, raising the bucket still higher.—J. G. Yoshioka (California).

1100. **Leidler, R.** *Über kalorische Labyrinthreaktion bei Reptilien. Vorläufige Mitteilung.* (Concerning caloric labyrinth reactions in reptiles. Preliminary communication.) *Monatssch. f. Ohrenhk.*, 1926, 60, 1089-1090.—Turtles and chameleons showed neither head nor eye nystagmus in response to irrigation with cold, but in response to warmth manifested prevailing nystagmus toward the irrigated side. Cocainising the auditory cavity abolished nystagmus due to calorization but not that due to rotation.—*C. W. Darrow* (Institute for Juvenile Research).

1101. **Maeterlink, M.** *La vie des termites.* (The life of the termites.) Paris: Fasquelle (Bibl. Charpentier), 1926. Pp. 220.—Literary synthesis of scattered facts gathered from many authors: entomologists, zoologists, trustworthy naturalist travelers; facts which isolated have no great significance, but which when grouped form a monograph similar to the history of an unknown population, and which are treated in a fashion as methodical and disinterested as in human history. In eleven chapters the author explains what a termite hill is, the alimentation of its inhabitants, their division into workers, soldiers and a royal couple. He describes their swarming, the ravages of the termites, their morale. A bibliography of about sixty titles completes the work.—*M. H. Piéron* (Sorbonne).

1102. **Mavor, J. W.** *A comparison of the susceptibility to X-rays of Drosophila melanogaster at various stages of its life-cycle.* *J. Exper. Zool.*, 1927, 47, 63-85.—The dose of X-rays necessary to kill 50 per cent. of the treated individuals was used. The egg and larvae are relatively susceptible to X-rays. After pupation there is a period when the resistance of the organism is nearly 100 times as great as the resistance of the egg when laid.—*L. Carmichael* (Princeton).

1103. **Maxwell, S. S.** *On the localization of otolith function.* *Laryngoscope*, 1924, December. Pp. 7. (Reprint).—Frogs operated in such a way as to remove the otolith material of the sacculus and lagena from both ears, and with due precautions in reference to vision and contact stimuli, still demonstrate normal postural reflexes. If the whole labyrinth is destroyed the reflexes no longer occur. Therefore these reflexes can either be mediated by the otolith organ of the utricle alone or we must conclude that the semicircular canals have definite static functions. Neither alternative appears to harmonize with the work of Magnus and collaborators in their study of centrifugalized guinea pigs.—*W. R. Miles* (Stanford).

1104. **Maxwell, S. S., & Huddleston, O. L.** *The relations of the individual ampullae of the semicircular canals to the individual eye muscles. I. The horizontal canals.* *J. Gen. Physiol.*, 1926, 10, 441-449.—It has always been a matter of conjecture what part each of the six extrinsic muscles of the eyeball takes in the response to stimulation of a single ampulla. These noteworthy experiments have been done on the dogfish. The fish is attached to an operating board and its respiratory needs met by passing a stream of aerated sea water into its mouth. The six muscles are all isolated and detached from the bulb of the eye by cutting out the portion of the sclera which includes the insertion of the muscle. A thread is passed through this bit of sclera and attached to a writing lever. Thus each of the six muscles has its own writing point and is free to contract independent of the others. Two or three muscles were made to record at once. Mechanical stimulation of light touch to the ampulla was used and the precaution was taken of first removing the anterior vertical ampulla so there would be no possible spread of stimulation. The stimulation of one horizontal ampulla was found to evoke a strong contraction of the homolateral rectus internus and of the contralateral rectus externus, a positive relaxation of the homo-

lateral rectus externus and the contralateral rectus internus, and weak contraction of the superior and inferior recti and also of the two oblique muscles of both eyes. These four muscles in their weak contraction provide a virtual axis upon which the eyeball rotates, acting in this case as fixation muscles. Further work on this subject is awaited.—*W. R. Miles* (Stanford).

1105. **Rabaud, E.** *L'orientation lointaine et la reconnaissance de lieux.* (Distant orientation and the recognition of localities.) *J. de Psychol.*, 1926, **23**, 885-934.—The first section of this treatise, published in a preceding number of the *Journal*, dealt with orientation in various social hymenoptera; it was shown that no mystic forces or new senses need be assumed to account for the capacity of these animals to return to and recognize their places of residence. Visual, kinaesthetic and olfactory references amply suffice to explain the phenomena. This was true for both flying and crawling insects. In this second section of his study Rabaud considers orientation of non-social species of nocturnal and diurnal ants, as well as that of certain other invertebrates such as termites and molluscs, with a final section on vertebrates. With respect to ants, olfactory references predominate for individuals marching in columns but visual references appear where that trait is destroyed. With such individuals visual references of a diverse nature—light large objects, and ground details, slope, etc.—determine orientation and recognition. No special sense of orientation is discoverable or necessary. Similar considerations hold for termites, molluscs, etc. Of invertebrates in general it was true that according to species and conditions, visual, olfactory, tactile, kinaesthetic, and baroesthetic references, all of a sensory order, account for all the phenomena of orientation which have been observed. Various theories of the mode of orientation in homing pigeons are discussed, but it appears that sensory factors still suffice to account for the facts. Other vertebrates, cats, dog, and man, employ the same kind of data. In short, it appears that all animals orient themselves in essentially the same way, i.e., by sensory references of several types, although the predominant type of reference varies with the species. Rabaud carries out numerous experiments, illustrative of his conclusions, summarizes the experimental literature of the subject, and gives a critical evaluation of theories of orientation. The article is accompanied by a bibliography of seventy-one items.—*C. M. Diserens* (Cincinnati).

1106. **Rabaud, E.** *L'instinct maternel chez quelques araignées.* (The maternal instinct in certain spiders.) *J. de Psychol.*, 1926, **23**, 1029-1034.—This is a report of preliminary observations of certain species of spiders (*Lycosa radiata*, *Pardosa palitans*, *Theridion sisyprium*, and *Thomisus onustus*). Only a few individuals of each kind were studied. Behavior in connection with the egg sack is first described. Interchangeability is possible in most cases, one species readily accepting the sack of another. The attraction seems to be of an olfactory nature. Spiders tend to accept additional egg sacks when presented, but fatigue sets in after successive presentations of the egg sack followed by withdrawals, so that acceptance is less lively and abandonment more facile. The egg sack is forgotten after a separation of several days. This also takes place where presentations take place every 24 hours. At each presentation reaction, times of acceptance increase and resistance to separation diminishes. On the 9th or 10th day, oblivion is complete. The behavior attending recognition is complex and varies with the individual and physiological condition. The behavior of the spiders probably depends on the influence of an internal secretion on the nervous system. It does not involve memory. The maternal instinct is no stereotyped mechanism, but displays considerable variation in functioning.—*C. M. Diserens* (Cincinnati).

1107. **Ritter, W. E.** *The natural history of our conduct.* New York: Harcourt, Brace, 1927. Pp. ix + 339. \$3.50.—Human and infra-human behavior are compared with reference to adaptation and maladaptation in an effort to place man accurately in the scale of intelligence. "Our primary interest throughout this book lies in the study of the way in which man's adaptive activities are superior to those of other animals. The value of such a study for human affairs lies in indicating the most effective lines of development . . . of conduct." Forty-six pages are devoted to an estimate of the degree of certainty attaching to a belief in the truth of evolution. The fundamental facts supporting the theory of evolution, and consequently the kinship of human and infra-human animals, are facts of resemblance in structure and behavior. Evolution is accepted by all as an explanation of the directly observable facts of development as these are shown, for example, in metamorphosis and in the development from infancy to maturity in man. Where ancestral relationships are not open to direct observation, theories must rest upon discoverable resemblances, and knowledge must remain in the realm of probability. Honest opponents of evolution must show what the facts of resemblance do signify if they do not signify evolution. Over 250 pages are devoted to the analysis of success and failure in animal activities. Behavior is successful to the extent that it contributes to the welfare of the individual, the group, or the race. Maladaptation occurs in two fundamental ways, the wastefulness and the misdirection of behavior. Wastefulness may be of time, energy, or materials. Misdirection of activity is particularly serious when it involves direct injury to self or kind. The topics mentioned above are discussed on the basis of a wealth of observation relating to instinct and to the behavior of primitive and cultured peoples. Man's great helper in correcting maladaptation is science. His great superiority rests upon the possession of a unique brain-forelimb combination. In elaborating upon the great rôle of the hand-brain unit in the intelligent activities of man, the author says: "As to all the activities on which human culture and civilization mainly depend, no animal below the primates could come much nearer equaling man in actual performance than they now do, even were they his equal in mental endowment." "All this, so patent that no one questions it, is equivalent to saying that nearly everything distinctively human which is done or ever has been done on this earth never could have been done without human hands." And yet "Almost the entire vast and varied material fabric of civilization . . . is wholly dependent upon the activities of human hands all so nearly identical in structure and basic function that almost any given pair could be as well trained to do any one part as any other part of the work involved!" Reference is made to Sir Charles Bell's "The hand" and to J. M. McFarlane's "The causes and course of organic evolution." Ritter promises a future volume, "The natural philosophy of our conduct," in which he will analyse the contributions made by the head in the head-hand coördination.—*W. S. Hunter (Clark).*

1108. **Warden, C. J.** *A short outline of comparative psychology.* New York: Norton, 1927. Pp. 96. \$1.00.—"A brief account of how the race has interpreted what it has known of animal life and behavior at various stages of development." The historical survey begins with a very short account of animal lore among prehistoric peoples—beginning with the Upper Paleolithic epoch—and among the pre-scientific peoples in ancient civilizations. The next section deals with the Greek influence from the time of the birth of the scientific movement in the sixth century B.C. through Aristotle and his followers. About Aristotle it is said that he "probably made a greater contribution to comparative psychology than any writer previous to Darwin." During the early and middle ages interest in and investigation of the mental life of animals suffered because

of the influence of Christianity: there was little natural history that was not encyclopedic; and though the writings of Aristotle were revived, they furnished no stimulus to further animal investigation. The next period treated is that covering the time from the 16th century through Darwin. During the early part of the period a real beginning was made in original observation and Descartes' views aroused much discussion, but it was not until Darwin voiced his theory of evolution that a real interest in the mental life of the animal from a comparative viewpoint was generated. The modern, experimental movement is thought of as beginning in 1890 with Morgan and Loeb as the founders and Thorndike and Watson as outstanding contributors to its advance.—*M. Goodrie (Clark)*.

1109. **Wyatt, H. G.** *Intelligence in man and ape.* *Psychol. Rev.*, 1926, 33, 375-384.—The writer of this article asks if the metaphor of the configuration as applied to intelligence is appropriate; does it go far enough, does it explain, can it be analyzed and resolved into more familiar psychological concepts? Discussing Ruger's and Peterson's experiments in which the reports of the subjects can be used, the author concludes that the act of insight is not always instantaneous and involves becoming as well as consummation. Configuration is an apt name for the new factor in the process, but inapt so far as the operation of intelligence is concerned. There may be intelligent (true) or unintelligent (illusory) configurations, for intelligence does not reside in the configuration as such. The process of intelligence effects true relations relevant to the purpose in view. This relating power may be regarded as an ultimate functional unit of mental activity which requires recognition on its own merits, for it is around this activity that sensation, perception, memory, and cognitional functions develop.—*H. Helson (Kansas)*.

1110. **Yerkes, R. M.** *The mind of a gorilla.* *Genetic Psychol. Monog.*, 1927, 2, No. 1-2, 1-193.—A six weeks' study of a female *Gorilla beringei* estimated to be five years of age. Twenty-four problem situations were set. These included the use of sticks as tools, manipulation of ropes, cans containing food, mechanical devices, obstructions, setting and piling boxes, multiple choice situations, and mirror. Comparison is made with the behavior of chimpanzees and orang-utans and tentative conclusions are cautiously offered. The gorilla showed no initial tendency to use the stick as a tool, but learned to do so only with great difficulty and in a few situations. Unlike most primates, the gorilla appeared to be relatively lacking in "destructiveness, random activity, curiosity, and imitativeness of the experimenter." She took up a negativistic attitude toward the experimenter, rarely accepting suggestions and imitating him only in regard to food situations. She worked energetically, wasting relatively little energy, and regulated her behavior in accordance with the value of the reward and the probability of obtaining it. She either lacked affectivity or was emotionally inexpressive. She seemed to lack spontaneity and curiosity. Her behavior cannot be completely described in terms of "trial and error" but gave evidences of insight.—*M. Meenes (Lehigh)*.

[See also abstract 1086.]

EVOLUTION AND HEREDITY

1111. **Stewart, F. H.** *Mendelism in bacteriology.* *J. Ment. Sci.*, 1926, 72, 582-587.—An investigation into the life history of two microbes, *Bacterium coli mutabile* and *Bacillus paracoli*, showing that *Bacillus coli communis* can be derived not only from *Bacterium coli mutabile*, but also from *Bacillus paracoli*, and that *Bacterium coli mutabile* can also be derived from *Bacillus paracoli*, the

changes occurring in response to changes of environment. It was found that in the colon and dysentery groups any given individual race may be modified almost at will by exposure to various sugars, in respect not only to sugar fermentation, but to capsulation and other characters. It was demonstrated that variation does not occur in one mode only, but two, and that one of these modes corresponds exactly with De Vries' mutation and the other with Mendelian variation. The explanation offered for the recurring phenomenon is that the parent form is a hybrid, which arises by De Vries' mutation affecting only one-half of the constitution of the organism. The variations exhibited occur only in adaptation to the stimulus presented, this fact establishing an important hypothesis for evolutionary theory—that a race can adapt itself by variation directly to its environment and that such an adaptation is rigorously inherited. Such an acquired character, however, is inherited only by unicellular organisms; in higher forms it doubtless would affect the soma only, and not the germ-plasm, and therefore not be inherited.—*E. F. Symmes* (Yale).

[See also abstract 1107.]

SPECIAL MENTAL CONDITIONS

1112. **Adler, A.** *Le tempérament nerveux. Éléments d'une psychologie individuelle et application à la psychothérapie.* (The nervous temperament. Elements of an individual psychology and its application to psychotherapy.) Paris: Payot, 1926. Pp. 366.—The author starts with the criterion that neuroses and psychoses are determined by the attitude that the person adopts regarding the absolute logic of social life, and that the nervous person lives in and exhausts himself for a world which is not ours, a world related to the idea of inferiority that he has created; an idea whose origin goes back to a hard and painful childhood. The work has two parts: (1) (3 chapters) origin and development of the feeling of inferiority and its consequences, psychic compensation and its preparation, reinforced fiction as a directing idea of the neurosis; (2) (10 chapters) practical applications. The author infers from his studies that psychoneurosis is produced by self-love, vanity and ambition, which protect the person from a too rough contact with life and its exigencies, i.e., with reality. No bibliography.—*M. H. Piéron* (Sorbonne).

1113. **Chang, Y. C.** *A criticism of Coriat's interpretation of dreams.* *Chinese J. Psychol.*, 1926, 4, No. 1.—The author attacks Coriat's interpretation of the figures "317" and "3990" in a dream cited in the latter's *Abnormal Psychology*, and shows how reasoning in that manner could have derived the same conclusions from almost any combination of numbers.—*E. Shen* (New York).

1114. **Del Greco, F.** *Sulla possibilità di una scienza del carattere.* (On the possibility of a science of character.) *Attes d. 5. Cong. d. Phil.* (Naples, 1924).—The study of character, so different in different individuals, ought to end in a real science of character, that is, in a psychology (synthetic and dynamic in function) of individual biology and of sociology. Its very important method is a provoked introspection which is accompanied by contributions of other researches and psychological disciplines (individually clinical, psycho-physiological, ethnographical, social).—*G. C. Ferrari* (Bologna).

1115. **Downey, J. E.** *A case of special ability with below average intelligence.* *J. Appl. Psychol.*, 1926, 10, 519-520.—A man who displayed an extraordinary memory for numbers has an I.Q. of 92.6 on the basis of his performance on the Terman adult test. An analysis of the individual tests shows a "high-

power visual with little evidence of average auditory memory, and little capacity to handle problems that involve reasoning."—*B. M. Morrison* (Kansas).

1116. **Fleming, E. G.** *Personality as revealed by the galvanometer.* *Amer. J. Psychol.*, 1927, 38, 128-129.—In a group of 18 subjects, the electrical resistance of the skin had a positive correlation of .44 with ratings of "magnetic personality" and of .40 with ratings of "nervous temperament."—*G. J. Rich* (Institute for Juvenile Research).

1117. **Gesell, A.** *The influence of puberty praecox upon mental growth.* *Genetic Psychol. Monog.*, 1926, 1, No. 6, 511-539.—Study of three cases observed and examined at intervals over a period of years. Pubertal precocity does not appear to result in an acceleration of the mental growth. "The changes concern personality as contrasted with intellectual factors." The endocrine complex is regarded as important in the determination of behavior. Pubescence is an important, but not the sole, factor in the growth complex. Early pubescence in general has a more favorable influence on general development than delayed pubescence.—*M. Meenes* (Lehigh).

1118. **Gratia, L. E.** *Le trac et la timidité. Conseils de pédagogie et d'éducation.* (Stage fright and timidity. Pedagogical and educational considerations.) Paris: Marcel Rivière, 1926. Pp. 267.—Stage fright is an acute degree of timidity, and if it obtrudes itself on us it becomes chronic. The man or child should be told that this condition can and ought to be remedied by the exercise of will. The work comprises a theoretical study of stage fright, its physiology, its causes, and the disturbances that it provokes; then follows a practical part indicating methods of combating it, which may be summarized in two principles: consciousness of one's personal value, and patience. Attitudes posed by M. G. Wagne, the great mimic artist of the opera and professor at the conservatory, will show to timid people the different aspects of stage fright and will help them to recognize themselves and to find in the synoptic pictures the pages which refer especially to them, and the means especially applicable to their cases. A small bibliography.—*M. H. Piéron* (Sorbonne).

1119. **Hadley, E. E.** *Vertigo and the death wish.* *J. Nerv. and Ment. Dis.*, 1927, 65, 131-149.—This patient developed severe dizziness after recovering from an operation for the removal of a cerebellar tumor. Through the analysis of seven dreams this condition was shown to be caused by problems at home. He was left the support of a mother and sister. A roomer in the house makes him jealous, as he is fixated on the mother and fears that she plans to marry the roomer. The dreams show the development of his troubles and his feeling that it would be better that he, the patient, were dead instead of his brother. However, the death wish contains also a fear of death, which shows that it is not actual death, but comfort, that is desired.—*O. W. Richards* (Boston Psychopathic Hospital).

1120. **Hermann, I.** *Charles Darwin. Imago*, 1927, 13, 57-82.—From the Freudian viewpoint Hermann discusses Darwin's ambivalent attitude to the passage of time, his industry and laziness, his sickness and anxiety, his ambivalent attitude to his father and to animals, and the influence of these factors upon his theory of the origin of species.—*C. Moxon* (San Francisco).

1121. **Levi-Bianchini, M.** *La simbolistica sessuale nel sogno mistico e profano.* (Sexual symbolism in mystical and profane dream.) *Actes d. 5. Cong. int. d. Phil.* (Naples, 1924).—Comparative study on the usage of sexual symbols in the mystical and profane dream (St. Theresa) in order to show that the symbol is a fixed and unmodifiable element of primitive archaic mentality, having been created by instinct, which is the fundamental and non-negligible component of the human soul. Psychoanalytic researches on dreams and their symbolism prove

in both cases the identity and the unity of instinct, which is the unconscious and irresistible desire for which humanity since its origin has employed the same symbols in order to design, today as in former times, the same desire and the same sexual or non-sexual aspiration.—*G. C. Ferrari* (Bologna).

1122. **Lowtzky, F.** *Bedeutung der Libidoschicksale für die Bildung religiöser Ideen.* (*Das dritte Testament von Anna Nikolajewna Schmidt.*) (Importance of libido vicissitudes for the formation of religious ideas. The third testament of A. N. Schmidt.) *Imago*, 1927, 13, 83-121.—Confirmation of Freud's theories of the libidinal sources of religious ideas and of the homosexual factor in paranoia is found in this mystic's writings. By full quotations Lowtzky supports his finding of abnormal narcissism, fixation of libido in the Oedipus period, and the attempt to return to the mother after disillusionment with the father. The mother is partly introjected as the ego-ideal, and partly projected as the persecuting force of evil.—*C. Moxon* (San Francisco).

1123. **Malinowski, B.** *The father in primitive psychology.* New York: Norton, 1927. Pp. 95. \$1.00.—A record of a detailed study of beliefs on procreation and reincarnation in the Trobriand Islands. The people in this matrilineal society are ignorant of physiological paternity. In all the varying and inconsistent versions as to reincarnation and the source of new life the following main points of agreement are found: "all spirits rejuvenate, all children are incarnated spirits, the identity of a sub-clan is present throughout the cycle, the real cause of child-birth is the spirit initiative from Tuma," the Island of the Dead. The spirit child is thought of as entering into the maternal body on a tide of blood which rushes to the head and then to the womb, where it nourishes the body of the child. When challenged as to their explanation of birth, the islanders cite numerous cases of unmarried women who have had children without having had intercourse and of many profligate women who remain childless. The only recognized importance of the sexual act for the production of children is that after a woman has had intercourse it is easier for a spirit child to enter her body. Illegitimacy is condemned, though this is not connected with the lack of belief in fatherhood. Along with all these inconsistencies, the father is recognized sociologically: there is a strong personal tie between him and the children; and any resemblance of the children to him rather than to the mother is said to be because of the "continued association between husband and wife."—*M. Goodrie* (Clark).

1124. **Manson, G. E.** *A bibliography of the analysis and measurement of human personality up to 1926.* *Repr. & Cir. Ser. Nat. Res. Council*, 1926, No. 72.—Prepared as a part of the investigation, "Analysis and Measurement of Human Personality," which was financed by the National Research Council Committee on Scientific Problems of Human Migration during the years 1925-1926. The work consists of the following parts: (1) a list of abbreviations; (2) the main body of the bibliography, arranged in alphabetical order according to the last name of the author; (3) a trait-term classification made according to the traits studied by the various authors cited; the trait-terms being arranged in alphabetical order and after each term being placed in serial order the numbers assigned to the citations in the bibliography proper in which this particular trait has been studied; (4) a list of methods of analysis and classification and experimental methods of measurement; (5) a list, regarded as incomplete by the author, of "Special Problems;" (6) list of books; (7) references to general articles; (8) references to other bibliographies; and (9) references pertaining to studies made of members of the teaching profession. The bibliography includes material published up to the beginning of the year 1926.—*R. W. Gilbert* (Clark).

1125. **McCurdy, J. T.** A hypothetical mental constitution of compulsive thinkers. *Brit. J. Med. Psychol.*, 1926, 6, 159-77.—A theoretical discussion, amplified by citations of cases from the author's clinical experience.—*N. Fenton* (Ohio).

1126. **Osty, E. Pascal Forthuny.** Une faculté de connaissance supra-normale. (A hypernormal cognitive ability.) Paris: Alcan, 1926. Pp. 178.—The author shows the rise, the development, and the properties of hypernormal cognition in an incredulous literary man who was very much astonished to find himself so endowed. No bibliography.—*M. H. Piéron* (Sorbonne).

1127. **Patini, E.** Il meccanismo genetico degli sdoppiamenti della personalità. (The genetic mechanism of dual personality.) *Attes d. 5. Cong. int. d. Phil.* (Naples, 1924).—In secondary personalities one has a construction or creation of the primary ego that denies the whole patrimony of past experiences by excluding them from its memory. The contents of the past experience with radical change of coenesthesia—i.e., of the feeling of its own personality—are not recognized. This feeling and this patrimony of past experiences are not lost, but are renewed and reintegrated in the formation of the new personality.—*G. C. Ferrari* (Bologna).

1128. **Potts, W. A.** Psychoanalysis and its developments. *J. Ment. Sci.*, 1926, 72, 542-573.—A discussion based on an introductory paper which reviewed in an elementary way the psychoanalytic method, stressing especially the difference between the Freudian and Jungian schools, with some mention of Adler. While some psychiatrists regarded psychoanalysis as utterly spurious, the majority whose opinions were expressed felt that it was a definite mode of treatment which must be considered, that it had undergone many changes since the early crude beginnings, but that it had to a certain degree aided in the relief of human suffering. There were many points of contention regarding method, theory, and results, but the discussion of all the topics at issue seemed to prove that psychoanalysis is a vital subject and a revolutionary contribution to abnormal psychology.—*E. F. Symmes* (Yale).

1129. **Ranschburg, P.** Zur Pathophysiologie der Sprech-, Lese-, Schreib-, und Druckfehler. (Pathophysiology of mistakes in speaking, reading, writing and printing.) *Psychiat. Neur. Woch.*, 1927, 29, 19.—(Festschr. f. G. Olah.) The author defends his explanation of the phenomenon named after him (error in the repetition of the same element) as a tendency to merge all that is temporarily alike and similar, against the view of H. Hennings, who traces it to a refractory phase 0.070 sec. after the first appearance of the element. In the first place, according to Stoll, the mistakes in copying texts with a meaning exceed those with senseless sequences of letters, in spite of the simultaneous perception. Furthermore, the inhibition exercises an influence over several letters that cannot belong to the same refractory phase, in reading as well as in typesetting. Finally, the reciprocal effects between the elements only similar, especially between r and l, cannot, he thinks, be explained according to Hennings.—*W. Wirth* (Leipzig).

1130. **Rhine, J. B., & Rhine, L. E.** One evening's observation on the Margery mediumship. *J. Abn. & Soc. Psychol.*, 1927, 4, 401-421.—The writers describe a seance attended at the home of Mrs. L. R. G. Crandon (Margery), Boston medium. Observations made on the performance here described are sufficient to warrant the conclusion that "the whole game was a base and brazen trickery, carried out cleverly enough under the guise of spirit manifestation." This conclusion is based on (1) conditions which permitted fraud and which were not necessary for genuine mediumship, (2) inconsistencies which arouse suspicion and point to trickery, and (3) positive evidence of fraud. Certain

possible objections to so sweeping a conclusion are cited and answered. It is pointed out that mere mystification is not proof of the supernormal. Suggestions are made as to the motivation of the case.—*E. N. Brush* (Boston Psychopathic Hospital).

1131. **Robin, G.** *Les haines familiales*. (Family hatreds.) *Les documents bleus* No. 30, Paris: Gallimard, 1926. Pp. 256.—It is only hatred in the family itself that is studied here, not hatred between different families. In the sixteen chapters there are viewed successively the family hatreds in history, hostile brothers, maternal hatred, paternal and filial hatred, the limits of morbid hatred, the hatred of the backward, of the degenerate, of the perverse, and false hatreds. In conclusion, the author declares that the first condition to disarm hatred is to unveil it. Thirty-one case histories illustrate this study, which has no bibliography.—*M. H. Piéron* (Sorbonne).

1132. **Rouhier, A.** *La plante qui fait les yeux émerveillés. Le peyotl (Echinocactus williamsii)*. (The plant which makes marvellous visions. The peyotl.) Paris: Doin, 1926. Pp. 371.—The peyotl is a little cactus which grows in Mexico and which since ancient times has been associated by the Mexican peoples with their magical and religious ceremonies. Certain Indian tribes have made it the incarnation of the god of fire and light. This plant provokes in man, among other reactions, an enormous production of colored and very beautiful visions which are in perpetual movement of rotation and translation. After the study of this plant from the botanical, chemical, pharmacological and ethnological viewpoint, the author describes, with 4 corroborating observations, the poisonousness of the peyotl and its states of intoxication. A bibliography of 136 works concludes the work.—*M. H. Piéron* (Sorbonne).

1133. **Schlesinger, B.** *Zwangshandlungen und Religionsübung*. (Compulsive actions and religious practices.) *Jahrb. f. Psychiat. u. Neur.*, 1927, **45**, 63–79.—The author criticizes the work of the same name by Freud, who compares the religious ceremonial only with a certain neurotic ceremonial and finds it identical, while in reality one may prove that it is internally fully identical with another neurotic proceeding. The author draws conclusions from a single minutely described case of a pathologically superstitious observance of a quite definite rite having the purpose of insuring good fortune in love. But here the motives are in the focus of waking consciousness, as is the religious motive in the ceremonial prescribed by religious tradition. As is shown in an addition to the well-known theory of Ludwig Feuerbach and a confession of Lichtenberg, it is a matter, with the aforementioned compulsive neurotic as well as with the religious individual, of this principal agreement: viz., in both are weak, timid, morose, unhappy natures. Thus there arises from utilitarian causes in each a metaphysical dementia. Out of psychical defense reactions two pathological conditions are forced which are only externally different, the simple compulsion neurosis, and consequent and parallel to it, neurotically compulsive religious practices.—*W. Wirth* (Leipzig).

1134. **Travis, L. E.** *A phono-photographic study of the stutterer's voice and speech*. *Psychol. Monog.*, 1926, **36**, 109–141.—Nature and etiology of stuttering. Effects of emotional stimuli; characteristics of voice and speech of stutterer as regards pitch, speaking range, mental effort, relaxation, time, and emotional conditions.—*F. A. C. Perrin* (Texas).

1135. **Travis, L. E., & Davis, M. G.** *The relation between faulty speech and lack of certain musical talents*. *Psychol. Monog.*, 1926, **36**, 71–81.—Speech defects and measures of musical talent. The sense of pitch, intensity, and tonal memory are factors in speech functions; scores on these tests are lower than normal in certain cases of speech defects, and show greater variability.—*F. A. C. Perrin* (Texas).

1136. **Watson, G. B.** **A supplementary review of measures of personality traits.** *J. Educ. Psychol.*, 1927, **18**, 73-87.—A resumé of the measures of personality traits which have been included in other summaries is followed by a study of "tests and questionnaires pertaining to personality traits which have not been included in previous summaries." These include tests of significant information, tests of environment, tests of attitude and emotional state, tests using the association method, some pencil and paper tests, and a few unclassified. Under tests of significant information there are now included tests of good manners, health knowledge, religious ideas, and of Bible knowledge. The influence of the environment is measured by scales for grading homes and neighborhoods and socio-economic status. Attitudes have been well studied under such headings as ethical discrimination, lying and gambling, vocational interests, social beliefs and many others. Word association methods still hold much promise. They have been helpful in distinguishing between the cheerful and the cheerless, in indicating character preferences, and as signs of emotional maturity. The author thinks that Hartshorne and May's tests of dishonesty in school situations are the most thoroughgoing character tests that have been developed.—*A. M. Jordon* (North Carolina).

[See also abstracts 1076, 1097, 1117, 1142, 1166, 1171, 1172, 1176.]

NERVOUS AND MENTAL DISORDERS

1137. **Comby, J.** **Revue générale et observations de 20 adultes mongoliens de 16 à 43 ans.** (General review and observations of 20 adult mongoloids between the ages of 16 and 43 years.) *Arch. de méd. enfants*, 1927, **30**, 38-47.—A mainly pathological study; little space is given to mental characteristics.—*M. H. Piéron* (Sorbonne).

1138. **Dandy, W. E.** **Impressions of the pathology of epilepsy from operations.** *Amer. J. Psychiat.*, 1927, **6**, 519-522.—From the study of the living brain at operation the writer concludes that all epilepsy originates in an organic change or lesion of the brain, and that the various lesions can be divided into two types: the congenital and the acquired. There are two different groups of acquired lesion: tumors and abscesses, and, secondly, defects following emboli, thrombi and traumatic destructions of the brain. Large tumors and abscesses obtain room by squeezing out the cerebro-spinal fluid from the subarachnoid space and by reducing in size the cerebral ventricles; the cerebro-spinal fluid performs a similar function in destructive or atrophic lesions, taking the place of that part of the brain which has been absorbed. At operation these changes are evident to the naked eye, because the fluid is not lost, and they may frequently be demonstrated by ventriculography. Doubtless the greatest loss is in the white matter, which is much less resistant to trauma and much easier of absorption than is the gray matter. The cerebro-spinal fluid serves the important function of space compensation, and the changes described are an effect and not a cause. The cause of this type of epilepsy is the primary cerebral lesion.—*B. Kendall* (Boston Psychopathic Hospital).

1139. **East, W. N.** **Some forensic aspects of epilepsy.** *J. Ment. Sci.*, 1926, **72**, 533-541.—Epileptic automatism only too frequently is brought forward as a defence in criminal charges, and the evidence often fails to support the alleged condition. Prominent authorities agree that automatic acts are not remembered, and motivated, premeditated crimes with full memory afterwards cannot be regarded as cases of epileptic automatism. That epileptic furor may result in crime is quite a different consideration, but amnesia should be the criterion in forensic decision.—*E. F. Symmes* (Yale).

1140. **Fenton, N., & Morrison, D. E.** A bibliography of American contributions to war neuropsychiatry. *Amer. J. Psychiat.*, 1927, 6, 507-517.—*B. Kendall* (Boston Psychopathic Hospital).

1141. **Jarkowski, J.** Un cas d'aphasie motrice. (A case of motor aphasia.) *Rev. neur.*, 1926, 33, 612-617.—A patient with little schooling acquires through a motor aphasia incredible reading facility and easy writing; without hesitation he writes figures with ease and works out simple problems; no multiplications, however. The author believes that it is not legitimate to base the distinction between true motor aphasia and simple motor aphasia on difficulties in reading and writing; between these forms there is no fundamental difference, but differences in the cultural levels of the patient; in the same way, between internal language and oral language there is only a difference of degree and not of quality. Internal language is not, he says, a faculty of sensory origin preceding the articulated word, but is derived from it. No bibliography.—*M. H. Piéron* (Sorbonne).

1142. **Minkowski, E.** L'Autisme. (Autism.) *J. de Neur. et de Psychiat.*, 1926, 26, 630-637.—An attempt on the part of the author to show the inadequacy of Bleuler's conception of autism as found in the work on "La démence précoce ou groupe des schizophrénies." According to Bleuler the patients of the schizophrenic type live in a world of their own; they limit their contact with the outside world to the strict minimum. Autism is this retreat from reality. Minkowski holds that this manner of approaching the problem of autism has its serious drawbacks. It leads to the belief that the schizophrenic voluntarily shuns contact with the outside world. Furthermore, he finds that the schizophrenics are far from being passive and plunged in reverie. They are active and their activity often bears an impress that is profoundly morbid although it is not possible or even necessary to see therein the expression of a suppressed complex. Minkowski cites several cases: A poor family lived in miserable quarters. The mother who was schizophrenic, declared one day that she must have a piano. She worked day and night and finally bought the desired object. There is no question here of retreat from reality. The woman did not content herself by imagining that she had a piano; she did not make stereotyped movements as though she were playing the piano; it is not probable that her desire had a symbolic meaning and was motivated by a complex. This desire in itself was not morbid; something essential, however, was lacking. The piano was out of harmony with its surroundings; it was useless and served no purpose. It becomes evident that autism includes more than mere autistic affectivity and autistic thinking. There also exists autistic activity, which is perhaps the important factor in schizophrenia. In neglecting this factor one is led to identify autism with the passive states of day dreaming. It seems necessary to give to autistic activity its place in the totality of our conceptions of schizoid and schizophrenic personalities. The conception of autism includes not only the withdrawal of the subject into a world of his own but also the disorders of activity such as have been shown in the case just cited.—*K. Brousseau* (Mills).

1143. **Paskind, H. A.** Epilepsy—its psychological aspects. *Welfare Mag.*, 1927, 18, 214-217.—The life of the epileptic contains incidents which frequently arouse the emotions of wonder, fear, self-abasement and gratitude. The presence of these four reverential emotions in a well-developed form accounts for the peculiar personality which is typical of the epileptic patient.—*G. J. Rich* (Institute for Juvenile Research).

1144. **Périsson, J.** Les troubles sympathiques dans l'hémiplégie. (Sympathetic disturbances in hemiplegia.) *Ann. de méd.*, 1926, 20, 560-571.—Observations were made regarding the temperature and arterial tension at different parts of the body, muscular atrophy, vaso-motor and pilo-motor reflexes, sudorific

secretions, oedematous conditions, etc., in connection with hemiplegia. Two syndromes are distinguished: (1) sympathetic paralysis, characterized by abolishment of the pilo-motor reflexes, sudorific secretions, etc., and (2) sympathetic excitation, characterized by exaggeration of the pilo-motor reflexes, augmentation of the sudorific secretions, etc. Sympathetic paralysis is present at the onset of hemiplegia, but later disappears, at which time a state of sympathetic excitation appears. No clinical material is presented.—*F. Fearing* (Ohio Wesleyan).

1145. **Van Loon, F. G. H.** *Amok and latta*. *J. Abn. & Soc. Psychol.*, 1927, 4, 434-444.—*Amok* and *latta* are two striking aberrations of mind found in the Dutch East Indies. *Amok*, found among men, is an acute, mostly infectious delirium, characterized usually by violent, and often by murderous activities. The peculiar psychic nature of the Malay is responsible for the symptoms, notably, the imperfect control of affect. Also it is important to remember that the protective weapon is habitually much closer at hand than in western society. *Latta* is a complaint chiefly of women. All patients are of the lower classes and the great majority have had intercourse and narrow contact with Europeans. It is a primitive affect-reaction, largely sexual in nature, having many points in common with hysteria, although essentially different from it. Hypersuggestibility and compulsions are important symptoms. The two conditions are related to a certain extent, their psychical basis being the same, and their study is interesting from the points of view of both racial and abnormal psychology.—*E. N. Brush* (Boston Psychopathic Hospital).

1146. **Vinchon, J.** *Les déséquilibres et la vie sociale*. (The unbalanced and social life.) Paris: Marcel Rivière, 1926. Pp. 265.—An account of the psychological and social reactions of nervous persons and their adaptation to social life. In 10 chapters there are presented successive studies of the emotive, the instinctive, the perverse, the imaginative, the spurious, the excited, the depressed, the feeble, and the weakened minds. The author also defines neurosis, hysteria, neurasthenia and epilepsy. A description is given of the conduct of the feeble-minded at liberty, and of the reactions of the unbalanced when mingled with groups. Conclusion: treatment appropriate to each case makes possible the utilization of these individuals for the greatest good of society and themselves. No bibliography.—*M. H. Piéron* (Sorbonne).

[See also abstracts 1036, 1040, 1067, 1112, 1133, 1134, 1176.]

SOCIAL FUNCTIONS OF THE INDIVIDUAL

1147. **Allport, F. H.** *The present status of social psychology*. *J. Abn. & Soc. Psychol.*, 1927, 4, 372-383.—Among current movements in social psychology the following types of approach may be distinguished: (1) the "social forces" school, (2) social mind theories, (3) the social laws approach, (4) the cultural approach (social products and social structures), (5) innate individual causation (the individual as the cause of society), (6) socialization theories (society as the cause of the individual), and (7) the behavior approach (the broader view of individual causation). In spite of this diversity of approach the same phenomena are dealt with. This common basis is illustrated by reference to an actual social phenomenon. The broader behavioristic and individual approach is held to offer a special advantage in synthesizing valuable contributions from a numbers of divergent fields. Errors are likely to arise not from the acceptance of a particular point of view but from its overemphasis and the exclusion of other approaches. These formulations serve a purpose in the orientation of research and should not stand in the way of acquisition of knowledge of social phenomena.—*E. N. Brush* (Boston Psychopathic Hospital).

1148. **Bridges, J. W., & Bridges, K. M. B.** A psychological study of juvenile delinquency by group methods. *Genetic Psychol. Monog.*, 1926, 1, 411-506. —A number of delinquent boys were tested in a Canadian training school by group methods. The boys studied were from two to four years retarded in school work, showed the usual psychological symptoms of delinquency, and came of families of artisans and laborers. Verbal intelligence was measured by the National Intelligence Test and non-verbal intelligence by the Myers Mental Measure. The results show that 42% are of normal I.Q. and the remainder fall below .90, 23% falling below .70. The Mathews Questionnaire for emotional stability gave a median score of 21 symptomatic responses as compared with 9 for unselected children with an absence of improvement in score with increase of age. This test indicated qualitatively the existence of conflict, delusions, physical ailments, motor incoordinations, abnormal impulses, depression and bullying tendencies. The Pressey X-O Test indicates that these boys as a group consider fewer things wrong but have more worries than normal boys. The Kohs Ethical Discrimination Test showed that these boys are less often "correct" in their moral judgments than normal. The National, Myers and Kohs scores correlate fairly highly with each other, while the Pressey and Mathews scores give low correlation with the other factors studied. The study of delinquency by the group method is shown to be "an important and necessary complement to the method of individual examination." The mental and physical characteristics of this group of delinquents do not correlate very highly with each other, although there is a general tendency for them to occur together.—*M. Meenes (Lehigh)*.

1149. **Jones, E. S.** The opinions of college students. *J. Appl. Psychol.*, 1926, 10, 427-436.—A set of 25 statements was scored by 248 college freshmen, 76 upper class students (almost entirely seniors), and 94 students in the second year of law. The 25 statements are divided into 5 equal groups on general questions as follows: national and social optimism, the labor problem and economic status in general, discipline, social life and conventions, and religion. To every statement a wide range of responses is given. College training seems to have had slight effect on the opinion of the students, for there is no decided difference between the responses of seniors and freshman, except on a few questions, e.g., economic status and religion. Sex differences are not marked, nor do the law students differ greatly in their opinions from the other men. Analyses of individual records bring out characteristic tendencies such as would be interesting and useful, perhaps, to instructors and employers. Tables of results are given.—*B. M. Morrison (Kansas)*.

1150. **Mendes-Corrêa, A. A.** Sur les prétendues "races" sérologiques. (On the supposed serological "races".) *L'anthrop.*, 1927, 36, 437-445.—There is no biochemical distinction between races which is as effective an anthropologic index as the most fallible of the morphological differentiae. The attempt to divide races into two groups, of which the blood serum of one has substances (agglutinins) which excite agglutination and that of the other has not, is futile. Even a fourfold division by the various agglutinator properties of the blood fails to give any significant anthropological distinction, for representatives of all four types are found in all populations which have been studied. The inheritance of similar anthropologic characteristics in groups serologically different and the diversity in such characteristics in a group serologically homogeneous throw doubt on the value of the distinction for purposes of classification. Japanese and Chinese are anthropologically similar but serologically different; Chinese and Hindus or Chinese and Senegalese are serologically similar but anthropologically different. The laboratory technique for making these differentiations is far from reliable, so that valid comparisons are rare. A more vital difficulty lies in the

nature of the differentiae. The substances in question are not known material substances but hypothetical entities assumed to correspond to certain phenomena. Their existence at present is really only as names. Elaborate studies of the supposed inheritance of these named conceptions even reach the point where certain individuals are assumed to inherit the *absence* of them. The phenomenon of agglutination may be one conditioned only by physical factors. Serology is disputed as a determiner of parentage; how little then can it assist in ethnological inference. Recent work of Snyder, who now distinguishes seven groups, is criticized. Particular exception is taken to his arithmetic derivation of certain distinctions, which is characterized as a mere paraphrase of his data.—*L. T. Spencer* (Yale).

1151. **Neifeld, M. R.** *The race hypothesis.* *Amer. J. Sociol.*, 1926, **32**, 423-432.—“An incomplete analysis of certain statistical results obtained by the army psychologists has led Professor Brigham in ‘A study of American intelligence’ to overlook the sharp differentiation between the intelligence of ‘immigrant groups’ and the intelligence of ‘races’. A more refined analysis eliminates as a serious explanation his contention that the great decrease in the percentage of Nordic blood in recent years accounts for the lower average intelligence of later immigrants. Lower scores on intelligence tests by more recent immigrants is a fact, but the reason must be sought in factors related to the passage of time and unrelated to race.”—*E. A. Esper* (Illinois).

1152. **Whitmore, C. E.** *The psychological approach to esthetics.* *Amer. J. Psychol.*, 1927, **38**, 21-38.—The esthetic situation may be considered as a tension between two levels, reconciling within itself a complexity of factors and differently adjusted in artist and in recipient. By the help of this concept it is possible to find equivalents for the intellectual element of control and the emotional element of mastery. The esthetic situation is essentially triadic, consisting of an experience in which its possessor has discovered an esthetic value, an experience into which that value is to be transmitted, and, between the two, a device by which the transmission is to be effected—or, in simpler terms, an artist, a work of art, and a recipient.—*G. J. Rich* (Institute for Juvenile Research).

[See also abstracts 996, 1012, 1019, 1026, 1034, 1049, 1075, 1122, 1131, 1135, 1146, 1167, 1169, 1183, 1209, 1211, 1216.]

INDUSTRIAL AND PERSONNEL PROBLEMS

1153. [Anon.] *A draft of a short act to create a public personnel agency.* *Pub. Person. Stud.*, 1927, **5**, 26-35.—A brief legislative bill is given which conforms with the current demand for brevity yet balances content by adequately describing constructive activities such as organization of job classifications, holding of entrance and promotion tests, administration of compensation plans, investigation of personnel matters, as well as setting forth the usual essential machinery, prohibitions and penalties.—*K. M. Cowdery* (Stanford).

1154. **Atzler, E., & Herbst, R.** *Arbeitsphysiologische Studien. III.* (Studies on the physiology of work. III.) *Pflügers Arch. f. d. ges. Physiol.*, 1927, **215**, 291-328.—The impossibility of making physiological studies of every industrial task leads to the study of certain basic elements of work. The economy of walking, pulling and pushing was investigated on a treadmill by measurement of respiratory exchange. The most satisfactory frequency in walking was found to be 87.5 steps per min., with a step length of 58.7 cm. For walking, pushing or pulling a load, these values are slightly increased, with the optimal load 14.5 kg. The best height for the hand grip used for pulling the load was established

at 100 cm. from the floor, and at 75 cm. for pushing. Pulling is more efficient with shoulder straps than with a hand grip and more economical with two straps than with one only. Data are generalized in a form suitable for practical application. All measurements in these studies are for a single subject, whose height, weight, etc., are given.—*L. T. Spencer* (Yale).

1155. **Bureau of Public Personnel Administration. Controlling sick leave with pay in the Baltimore city service.** *Pub. Person. Stud.*, 1927, 5, 36-38.—Sick leave with pay, too often administered under varying standards by different operating officers, is centrally handled in Baltimore by means of a follow-up by the staff physician of the weekly reports of department and institution heads. The results show seasonal fluctuations, but on the whole a rate of attendance to duty perhaps too faithful for individual welfare.—*K. M. Cowdery* (Stanford).

1156. **Bureau of Public Personnel Administration. Suggested tests for instrument man.** *Pub. Person. Stud.*, 1927, 5, 39-44.—This unstandardized series of tests for instrument man in a surveying party is based upon his duties of adjusting, operating and reading surveying instruments, and upon the high degree of accuracy, the sense of responsibility, and mechanical ability required. The series includes four tests of the short answer type (three forms available) dealing with instruments and procedure, mathematical calculations, interpretation of level and field notes, and accuracy of observation by means of questions about a photograph exposed for a limited period. A brief field test where feasible, also the usual items as to education and experience, preceded by a qualifying physical examination, are recommended.—*K. M. Cowdery* (Stanford).

1157. **Committee on Research, Illuminating Engineering Society. A list of research problems.** *Trans. Ill. Eng. Soc.*, 1927, 22, 189-194.—A first list of problems suitable for theses for technical and scientific students and for researches for technical and scientific men of greater training and experience. Further lists are promised. The list contains a number of topics of interest to psychologists.—*G. Rand* (Bryn Mawr).

1158. **Courtis, S. A. The development of ability in research.** *Stud. Educ.*, 1926, No. 15, 85-93.—Two views of research, the radical and the conservative, are presented and discussed. Personality culture merits the best attention of college teachers. It is important to awaken the social consciousness of students.—*T. F. Hunt* (Clark).

1159. **Damiens, —, Fontègne, J., & others. Philosophie scientifique et sociologie.** (Scientific philosophy and sociology.) Paris: F. Nathan. Pp. 277.—Lectures delivered to principals (men and women) of normal schools. One of these lectures refers to psychology—the one by J. Fontègne on professional orientation. The author, after having discussed the determination of aptitudes by tests, shows what rôle the teacher can play in supplying the child with general knowledge and the qualities and the idealism necessary in each profession. He claims also that by means of moving pictures the child may become acquainted with the advantages and the hardships of the principal professions, among which he will be asked to choose the one which he would prefer if he were considered qualified to follow it. No bibliography.—*M. H. Piéron* (Sorbonne).

1160. **Ferree, C. E., & Rand, G. Intensity of light and speed of vision studied with special reference to industrial situations. Part I.** *Trans. Ill. Eng. Soc.*, 1927, 22, 79-110.—The effect of intensity of light on speed of vision is studied in the presence of two variables, viz., size of test-object and difference in coefficient of reflection between object and background. Sizes of object were used subtending visual angles of 1, 2, 3, 4.2 and 5.2' and having coefficients of reflection of 3 to 4 per cent. The coefficients of reflection of the backgrounds were 78, 29, 21 and 16 per cent. The visual angles were considered representa-

tive of sizes of work for which changes of intensity of light have an important ocular effect; the coefficients of reflection of the backgrounds are, respectively, approximately those of a white surface of good reflecting power, polished brass and steel, unpolished brass and steel, and iron. The range of illuminations covered extended from 1.25 to 100 ft.-c. The determinations were made with the special purpose of obtaining information on the following points: (1) the comparative importance of changes in size of object, difference in coefficient of reflection between object and background, and intensity of illumination as factors influencing the speed of the eye's response; (2) the influence of size of object and difference in coefficient of reflection between object and background on the range of speeds given by the illuminations selected; and (3) the influence of both of these factors on the shape, sharpness of inflection, and location of the knee of the curve representing the change in speed of the eye's response with change of intensity of light. Other points of special consideration have been the comparative benefits of increase of illumination at various points in the intensity scale, the relation of size of pupil to intensity of light and speed of vision, and a comparison of the more important features of the curve representing changes of speed of vision with change of intensity of light for a pupil of constant and of variable size.—*L. L. Sloan* (Munsell Research Laboratory).

1161. **Lehman, G.** *Arbeitsphysiologische Studien. IV.* (Studies on the physiology of work. IV.) *Pflügers Arch. f. d. ges. Physiol.*, 1927, **215**, 329-364.—The most economical control of horizontal pushing and pulling movements of the arm was investigated by respiration measures, a special dynamometer, and an arm ergostat. 70 cm. was found to be the optimal distance for either pushing or pulling. For heavy loads a straight arm position is most favorable; for lighter loads, the arm should be slightly bent. Body movements in pulling may be more forceful in short excursions than in long. The optimal height for the movements is 140 cm. from the floor (subject standing). For heavy loads a greater height is favored. Although several weeks' practice renders the left arm as effective as the right in pushing, it never becomes equal to the right in pulling. When both arms are used the best combinations of movement are: simultaneous pulling with both arms with one foot advanced; if the movements of the arm are opposed, feet should be placed side by side. Speed of movement varies with the specific situation and may apparently well be left to the subjective control of the worker.—*L. T. Spencer* (Yale).

1162. **Luckiesh, M., Cobb, P. W., & Moss, F. K.** *An investigation of the reliability of the "li" test.* *Trans. Ill. Eng. Soc.*, 1927, **22**, 43-51.—This paper presents the results of a series of three-minute tests which were carried on as a check on the reliability of the so-called "li" test as a means of drawing important conclusions as to the value of various factors in lighting. In an appended reply (pp. 52-78) the originators of the test show that in their investigation the authors had failed to control the important variables (progressive fatigue, progressive adaptation, and practice) and had neglected to take other precautions all of which had been fully described in print and discussed as being essential to the successful employment of the test.—*L. L. Sloan* (Munsell Research Laboratory).

1163. **Ohmann, O. A.** *The measurement of capacity for skill in stenography.* *Psychol. Monog.*, 1926, **36**, 54-70.—Analysis of stenographic ability and correlations between this ability and a battery of tests. Suggestions for further study.—*F. A. C. Perrin* (Texas).

1164. **Robinson, B. W.** *An experimental study of certain tests as measures of natural capacity and aptitude for typewriting.* *Psychol. Monog.*, 1926, **36**, 38-53.—Correlations between achievement in typewriting and tests of misspelled

words, Burt's number of ding test, cancellation, etc., range from .07 to .35. Inter-correlations among the tests are low. A weighted composite score correlated with achievement yielded a coefficient of $.29 \pm .06$.—*F. A. C. Perrin* (Texas).

1165. **Strayer, G. D.** Job analysis and the problem attack in the training of superintendents of schools. *Stud. Educ.*, 1926, No. 15, 146-154.—Knowledge of the facts of educational administration and actual practice in the work and technique of applying these facts in the solution of problems ought to be the basis for the training of school administrators. Strayer advocates and uses the methods of job analysis in determining the duties and problems of the administrator. He lists ten fields in which the administrator should have expert knowledge.—*T. F. Hunt* (Clark).

[See also abstracts 1000, 1071, 1191, 1197, 1198, 1199.]

CHILDHOOD AND ADOLESCENCE

1166. **Bernfeld, S.** Die heutige Psychologie der Pubertät. Zur Kritik ihrer Wissenschaftlichkeit. (The present-day psychology of puberty—a criticism of its scientific character.) *Imago*, 1927, 13, 1-56.—From the standpoint of Freudian psychology Bernfeld criticizes in some detail recent books by O. Tumlirz, E. Spranger, C. Bühler, W. Hoffmann and Th. Ziehen.—*C. Moxon* (San Francisco).

1167. **Blanchard, P., & Paynter, R. H.** Socio-psychological status of children from marginal families. *Family*, 1927, 13, 3-10.—The authors suggest a method for the checking of social welfare activities, so as to obtain definite information upon which to decide whether their influence is dysgenic or eugenic in nature and whether their work is for the good or ill of contemporaneous society. They studied 80 children, from 23 marginal families, who were receiving aid. The percentage of intellectually inferior children was somewhat larger than in the general population. But the percentage of behavior difficulties was small, and the children showed normal emotional reactions and family relationships. On the whole, they seemed likely to develop into well-adjusted and socially desirable adults.—*G. J. Rich* (Institute for Juvenile Research).

1168. **Kido, M.** Special structure of intelligence of children. *Jap. J. Psychol.*, 1926, 1, No. 6, 123-147.—10 boys of 8 to 14 years and 10 girls of 8 to 12 years in a certain ungraded school in Tokyo, Japan, were given tests in discrimination, memory-association, and abstraction. (1) Discrimination. 10 circles differing in diameter by a step of 1 mm. were discriminated just as well as by normal children, but 5 cylinders differing in weight by a step of 1 gm. failed to be arranged in order. (2) Memory-association. The maximum number of digits immediately recalled was 3. A successful recall was possible only when the digits to be recalled were presented a certain number of times. When more digits than the limit of memory span were given, the recall failed entirely. Normal children tested under the same conditions recalled with ease 4 or 5 digits. To test further memory-association, cancellation and substitution tests were given. With rows of 200 kana (Japanese alphabet) irregularly arranged, the limit of successful cancellation was found to be 4 or 5 letters. For substitution 5 forms, star, circle, square, cross, triangle, were to be substituted by the first five numerals, or five vowels, or by both. A direct association of the forms with one or two numbers was found possible; an indirect association of the forms with vowels through mediation of numbers was found impossible. (3) Abstraction. Nine circles were given in sections to be reconstructed into circles. The reconstruc-

tion was poor, due to the failure to perceive the sections as parts of a circle, to the tendency to form a straight line instead of an arc with the sections, and to the repetition of wrong moves. A form cancellation test was also given. The test material consisted of circles, squares, triangles, and combinations of any two or three of these forms. The cancellation of one form was successful; two forms combined failed to be cancelled due to the inability to include, for example, a triangle inscribed in a circle, or circumscribed by a circle, under a combined form of triangles and circles. The relationship of inscription and circumscription of the combined forms failed entirely to be perceived.—*J. G. Yoshioka* (California).

1169. **Lehman, H. C., & Witty, P. A.** Periodicity and play behavior. *J. Educ. Psychol.*, 1927, **18**, 115-118.—A list of 200 play activities was submitted to more than 6000 pupils with a request to indicate only those in which they had engaged during the preceding week. Later the children were asked to check those they had taken part in alone. There is a decreasing number of games participated in from ages seven to nineteen, but the transition from age to age is very gradual. "The play trends which characterize a given age group seem to be the result of gradual changes occurring during the growth period."—*A. M. Jordan* (North Carolina).

1170. **Monahan, J. E., & Hollingworth, L. S.** Neuro-muscular capacity of children who test above 135 I.Q. (Stanford-Binet). *J. Educ. Psychol.*, 1927, **18**, 88-96.—Can children of unusual mental capacities (I.Q.'s above 135) jump as well, chin as well, or grip as strongly as those of the same age, sex, and race of median intelligence (I.Q.'s about 100)? To answer these questions 42 children from the gifted group were paired in age, sex, and race with children from an average group. Measures of jumping, chinning, and of strength of grip were made under standard conditions. The bright children are equal to the average in the standing broad jump; in chinning they are below the average; and in strength of grip they surpass the performance of the average. It is inferred that the superior body weight of the gifted is a handicap in chinning.—*A. M. Jordan* (North Carolina).

1171. **Neill, A. S.** The problem child. New York: McBride, 1927. Pp. 256. \$2.00.—The underlying theory and the practice of a liberal teacher of problem children in his own "free" school. He holds that all children are inherently good, that "badness", criminality, and laziness are sicknesses caused by conflict brought about by moral instruction. Prohibitions cause desires, usually infantile, to be repressed into the unconscious, only to reappear later in symbolic form which does not satisfy the original wish. The alternative is to find out the child's infantile interests and help him to live them out, thereby dissolving them. His treatment of "sick" children he calls "reëducation" rather than psychoanalysis proper, although he uses simplified psychoanalytic methods in breaking down "the child's superimposed conscience", built up by a religious upbringing, thwarting of power impulses, and taboo-emphasis upon the importance of sex. The relation of the parent to the child's development is both implied and expressed. The method used in presenting the above ideas is principally that of illustration: definite problems are cited, together with ways in which they were met, and results obtained. A brief history is given of the author's school, first as the International School at Hellerau, near Dresden, then as a school in Vienna, and finally at Lyme Regis in England, where it is now functioning.—*M. Goodrie* (Clark).

1172. **Nouca, E.** Une enfant instable; tentative de rééducation. (An unstable child; attempt at reeducation.) *Ann. d. l'enf.*, 1927, **1**, 17-20.—Account of the pedagogical methods employed in re-educating a young, unstable person whom it seemed hard to interest and who later became an active business woman

who recognized her opportunities excellently. No bibliography.—*M. H. Piéron* (Sorbonne).

1173. **Piaget, J.** *La représentation du monde chez les enfants. Comme suite à ses études précédentes sur la pensée des enfants.* (Ideas of the world in children. A sequel to preceding studies on the thought of the child.) Paris: Alcan, 1926. Pp. 424.—The author asks the question whether the child has, like ourselves, the belief in a real world distinct from the various fictions of his play and of his imagination (the problem of reality from the child's viewpoint), and whether the child offers an original type of explanation (the problem of causality from the child's viewpoint). He looks for the best methods; he approaches first that of tests, which the author finds dangerous in this particular case, since it risks falsifying the results by upsetting the orientation of the child's mind; then, that of pure observation, which the author finds equally impractical on account of the intellectual egocentrism of the child and on account of the difficulty of discerning in the subjects what is play and what is belief. He then adopts a mixed method, that of clinical examination. He presents his results in two chapters, divided thus: child realism (the idea of thought, nominal realism, dreams, the origins of participation); child animism (consciousness attributed to things, concept of life); child artificiality and the ulterior stages of causality (origin of stars, of water, of trees, of the earth). The conclusion is that the child is not a purely imaginative being, but an organism which assimilates things, selects them and digests them according to its own structure, and that even when the child constructs a conception in the case of a word of adult language, this conception may be entirely childish in the sense that, the adult word not being clear to him, he gives it a sense of his own; until upon growing up, his mental structure becoming adult, he thinks like an adult. A list of the authors cited is given.—*M. H. Piéron* (Sorbonne).

1174. **Regensburg, J.** *Making the most of your child's intelligence.* *Survey*, 1927, 57, 802-804.—A child's schooling must be regulated in accordance with his special abilities, interests, ambitions and emotional reactions, if his intelligence is to be utilized most effectively.—*G. J. Rich* (Institute for Juvenile Research).

1175. **Temple, P.** *The admiral and others.* New York: Dutton, 1927. Pp. xi + 138.—A fanciful creation in which the characters of a small group, mostly adults, are shown through the eyes of the 12-year-old author. A striking feature is an obviously childish style combined with a content which shows a well developed sense of observation and humorous outlook on human nature. Psychologically interesting because of what it reveals indirectly about the active material in one child's mind.—*M. Goodrie* (Clark).

1176. **Wallon, H.** *Une variété d'enfants anormaux: les instables.* (A variety of abnormal children: the unstable.) *Ann. de l'enfance*, 1927, 1, 4-14.—An analysis of instability in children. Division of the unstable into three categories, characterized by: (1) asynergic instability and its relations to disturbances of attention; (2) disturbances of tonus accompanying or taking the place of disturbances of habits, and their influence on the psychic conduct; (3) choreic and very often mythomantic agitation (the most numerous category). The author insists on the necessity of recognizing the correlations between the mental and neurological states, in order to determine the particular pedagogical methods which are desirable in the different categories of unstable children.—*M. H. Piéron* (Sorbonne).

1177. **Wellman, B.** *The development of motor coördination in young children: an experimental study in the control of hand and arm movements.* *Univ. Iowa Stud.: Stud. Child Welfare*, 1926, 3, No. 4. Pp. 93.—A child's ability

to make movements in eight primary directions was tested in a preliminary experiment with a modification of the Stoelting tracing board, and in a later experiment with a tracing path, in which the child drew a line with a pencil between two printed lines with the path between them of the same dimensions as that of the tracing board. The subjects included 136 children from three to six years of age. Analysis was made of the relative difficulty of the eight directions, handedness, the different types of body, arm and hand movements, the effect of practice, the relation of accuracy and speed and the inhibiting effect of the guide lines. Correlations were made with mental age, four physical measurements, and five other motor tests.—*B. Wellman* (Iowa).

[See also abstracts 1010, 1022, 1040, 1044, 1046, 1048, 1074, 1077, 1118, 1192, 1207, 1218, 1224.]

EDUCATIONAL PSYCHOLOGY

1178. **Alexander, C.** A transplanted American educational administration: the Philippine school system. *Stud. Educ.*, 1926, No. 15, 128-145.—An account of the evolution of the Philippine school system since the American occupation. Summary of educational administration in America in 1898. Present status of education in the Philippines is analyzed. The author concludes that in comparison with the educational situation in the U. S. that of the Philippines seems almost hopeless.—*T. F. Hunt* (Clark).

1179. **Bolenbaugh, L., & Proctor, W. M.** Relation of the subjects taken in high school to success in college. *J. Educ. Res.*, 1927, 15, 87-92.—A study of the scholarship of students at Stanford University. Records of 597 students were studied in both the academic and vocational groups. The authors find that "not enough difference exists between the achievement of the academic-pattern group and the vocational-pattern group . . . to justify any discrimination against an applicant for college admission because he took from 15 to 50 per cent. of his preparatory subjects in the vocational group of high school subjects."—*S. W. Fernberger* (Pennsylvania).

1180. **Breed, F. S.** Limitations of the social principle in making a curriculum. *Stud. Educ.*, 1926, No. 15, 104-107.—Spelling vocabularies based upon written discourse of adults provide a child with a considerable body of words beyond his intellectual level, and deprive him of much material at his intellectual level. Analysis of adult activities is not an adequate source of materials for the curriculum.—*T. F. Hunt* (Clark).

1181. **Briggs, T. H.** Needed research in secondary education. *Stud. Educ.*, 1926, No. 15, 66-73.—In secondary education the primary need is for an acceptable philosophy. Research will give the facts upon which a philosophy may be built. Emphasis is especially placed on the necessity of popularizing results of research, in order that they may influence school procedure.—*T. F. Hunt* (Clark).

1182. **Charters, W. W.** A technique for the construction of a teacher-training curriculum. *J. Educ. Res.*, 1927, 15, 176-180.—*S. W. Fernberger* (Pennsylvania).

1183. **Clark, E. L.** Family background and college success. *School & Soc.*, 1927, 25, 237-238.—740 Northwestern University freshmen were grouped according to the education and place of birth of their parents as well as the education of their sibs. The university grades of those students having two foreign-born parents were highest; of those having two native-born parents, lowest. The groups whose parents had, respectively, college, high-school, and grade-school experience ranked third, first, and second in scholarship. Sib education of

college grade, on the other hand, correlated with the most successful scholarship, the condition of no sibs with the least successful. The group differences are statistically significant.—*H. L. Koch* (Texas).

1184. **Darling, C. R.** *The optical lantern as an aid to teaching.* *Proc. Opt. Conv.*, 1926, 924.—The article is an abstract of an address. The author deplors the fact that lanterns are generally used merely for the projection of slides, and that their possibilities in other directions are not utilized. The use of the lantern for demonstrations of physical and chemical experiments is discussed, and the author mentions inexpensive methods of adapting the ordinary projection lantern to this kind of work.—*J. R. Liggett* (Clark).

1185. **Douglass, A. A.** *Secondary education.* Boston: Houghton Mifflin, 1927. Pp. xxxv + 649. \$2.75.—A comprehensive text book of secondary education. Part 1 deals with the system of public school education and includes a historical review of secondary education in America; a description of the public school system as it is now developing; a description of college and university education; a discussion of college entrance requirements; a description of secondary schools in England, France, and Germany; and a discussion of the problems in the reorganization of secondary education. The treatment emphasizes the point of view that the "place of the secondary school is rightly conceived only when it is regarded as an integral part of the entire public school system, the relationship of whose various administrative units must be understood by those charged with the responsibility of teaching and administration if any single unit is to function properly." Part 2 treats of the secondary school pupil under the following chapter headings: mental and physical characteristics of adolescence, individual differences, elimination from school, and educational and vocational guidance. The prevailing ideas in this part are "that education is growth and development, that growth and development are promoted by an environment whose elements have been selected and arranged in accordance with biological and psychological principles and laws, and that the technique of guidance shows the way of promoting mental and physical development." Part 3 is devoted to the curriculum, considered in terms of educational aims, particularly those set forth by the Commission on the Reorganization of Secondary Education, rather than in terms of subjects. The specific subjects discussed are: the aims and objectives of secondary education; the selection and validation of curriculum materials; the fundamental processes; education for citizenship; education for home membership; moral training; worthy use of leisure; health education; training for industry, agriculture, and commerce; the program of studies; and extra-curricular activities. Numerous tables and figures are presented. At the end of each chapter is a selected bibliography and a list of questions and topics for discussion.—*L. M. Harden* (Clark).

1186. **Fowlkes, J. G.** *A report of a controlled study of the learning of multiplication by third-grade children.* *J. Educ. Res.*, 1927, 15, 181-189.—Experiment on 31 children with normal mentality at Madison. An attempt was made to determine the difficulty of the different combinations. The pupils were given mimeographed sheets. On the 11th day the 100 combinations were tested. The results indicate that there is much less difficulty in the different basic multiplication facts than has been concluded from former uncontrolled studies. Practical suggestions for the teaching of multiplication are made.—*S. W. Fernberger* (Pennsylvania).

1187. **Frank, G.** *The Experimental College of the University of Wisconsin.* *School & Soc.*, 1927, 25, 286-289.—President Frank describes briefly the general plan and objectives of the Experimental College to be established in the next academic session at the University of Wisconsin. The aim of the College is to

afford opportunity for extensive experimentation upon the problems of college instruction methods, college curricula, and student organization. Dr. Alexander Meiklejohn will direct the enterprise, and 250 freshmen and sophomores will be enrolled.—*H. L. Koch* (Texas).

1188. **Grizzell, E. D.** *Training teachers to utilize community resources as curriculum material.* *Stud. Educ.*, 1926, No. 15, 120-127.—In its teacher training courses the University of Pennsylvania trains teachers to utilize the work of other social agencies as curriculum material. The content of the training involves: a survey of regional and local institutions, a general investigation of institutions and agencies, an analysis of the results of the surveys, and the utilization of the resources discovered as definite elements of the curriculum.—*T. F. Hunt* (Clark).

1189. **Haggerty, M. E.** *Specialized curricula in teacher training.* *Stud. Educ.*, 1926, No. 15, 3-26.—The College of Education of the University of Minnesota will announce 35 specialized curricula leading to the B.A. degree, based on the assumption that teacher training should be specific training for a specific job. Curricula are based upon teacher needs, determined in so far as possible by studies, fourteen of which are listed as already completed or in progress. Some of these studies reviewed include the annual demand for high school teachers, teaching assignment of teachers, relation of teaching assignments to training.—*T. F. Hunt* (Clark).

1190. **Harap, H.** *A critique of the present status of curriculum-making.* *School & Soc.*, 1927, 25, 207-216.—An outline of the steps important in curriculum-construction is presented, together with a discussion of the limitations of techniques prevailing at the present time. Confused or vague objectives, lack of understanding of the nature of activity and means of translating it into acceptable teaching units, lack of sufficient provision for repetition, individualization, and grading of activities are alleged to be among the most outstanding defects of the modern approach to the problems of curriculum-making.—*H. L. Koch* (Texas).

1191. **Hosic, J. F.** *College courses for elementary-school principals.* *Stud. Educ.*, 1926, No. 15, 38-44.—A summary of present practices in American universities in so far as they relate to the training of elementary-school principals, together with the trends in such training. California and Indiana are the only states which have defined the status of principals and prescribed their qualifications. Indiana University, following lines laid down by the University of California, now requires 18 hours of special work for the principal's certificate.—*T. F. Hunt* (Clark).

1192. **Jensen, D. W.** *The gifted child.* *J. Educ. Res.*, 1927, 15, 126-133; 198-206.—The first portion reviews the present facilities provided by schools for handling the gifted child. The result of a questionnaire to 220 cities is reported. In 45 cities special classes are provided; in 31 X-Y-Z classes are provided; in 43 there is homogeneous grouping with promotion by subject; 54 have provision by promotion or enrichment, and 47 have no provision for handling this type of student. The second part deals with present practices in special classes for the gifted and deals with the answers to a questionnaire which covered the methods of choosing the pupils and of administering the classes.—*S. W. Fernberger* (Pennsylvania).

1193. **Judd, C. H.** *Needed research in elementary education.* *Stud. Educ.*, 1926, No. 15, 56-65.—A brief outline and discussion of fundamental investigations that ought to be undertaken: an investigation into the characteristics of pupils of different ages; a study of the social institutions to which we introduce pupils; a study of the fundamental principles of human relations in the institu-

tion which is supposed to mold these relations; the relation of the school as a social institution to the industrial forces which influence its operation. The consequences of present practice should be investigated as well as the practice itself.—*T. F. Hunt* (Clark).

1194. **Keener, E. E.** A plan for rating schools on the basis of efficiency. *J. Educ. Res.*, 1927, 15, 190-197.—Standardization of achievement in arithmetic fundamentals, arithmetic reasoning, reading, penmanship, spelling, language, citizenship, music, promotion rate, reports and fire drill are combined into a statistical rating.—*S. W. Fernberger* (Pennsylvania).

1195. **Kelly, F. J.** Needed research in higher education. *Stud. Educ.*, 1926, No. 15, 74-84.—Research is treated under two heads: statistical, dealing with data already available; and experimental, having to do with deriving new data. Listed under needed statistical studies are: cost studies in higher education, teaching load, elimination and retardation of students, content of courses with reference to overlapping. Under the second head five topics are discussed. Two of these topics are: the need for the support of a few colleges for purely experimental purposes, and studies of the aims of higher education.—*T. F. Hunt* (Clark).

1196. **Knight, F. B.** The superiority of distributed practice in drill in arithmetic. *J. Educ. Res.*, 1927, 15, 157-165.—The author first considers a number of theoretical propositions with regard to this problem, and then reports some experimental findings obtained by E. M. Luse, based upon results from 600 children in the fifth grade. These are that both the control and the practice groups make a decided gain from the 50 periods of drill. The gain for the distributed drill was from 20 to 54 per cent. in the number of combinations attempted and 31 to 85 per cent. in the number of combinations correctly answered. The gain from the haphazard type of drill was from 11 to 40 per cent. in attempted combinations and from 13 to 61 per cent. in combinations correct. These facts are evident for all four arithmetical processes. In a retesting after the summer vacation it was found that the permanent gain was also greater for the group which had distributed drill.—*S. W. Fernberger* (Pennsylvania).

1197. **Knight, F. B.** The selection of high-school teachers. *Stud. Educ.*, 1926, No. 15, 35-37.—Author suggests advisability of framing tests to determine teaching aptitude in candidates for positions as high school teachers, following the lines of tests for aptitudes in connection with elementary teachers which are already in use.—*T. F. Hunt* (Clark).

1198. **Monroe, W. S.** The undergraduate curriculum in education. *Stud. Educ.*, 1926, No. 15, 26-34.—An analysis of the information secured by the Commission on Unit Courses and Curricula of the North Central Association (1923-1925) concerning courses in education in 162 of the 199 colleges of the Association. There is much duplication of content in the courses given in any one of the schools. Courses having identical subject matter in the various schools are variously named even when based upon the same text. The author concludes that in preparing undergraduates for secondary school teaching a maximum of thirty semester hours in education should be given, not including practice teaching and special methods.—*T. F. Hunt* (Clark).

1199. **Pressey, S. L.** Experiments looking toward fundamental changes in instructional methods in professional courses for teachers. *Stud. Educ.*, 1926, No. 15, 45-49.—Three problems are discussed: (1) Cannot a large portion of the factual material in teacher training courses be mastered outside class, thus leaving class periods free for purposes of discussion? (2) Cannot the Dalton Plan be used in college? (3) Cannot graduate students be specifically trained as experts in teacher training?—*T. F. Hunt* (Clark).

1200. Remy, —. *Un essai d'enseignement sur mesure*. (An essay on teaching according to measurement.) Paris: Colin, 1926. Pp. 270.—The author has tried, not to make a selection of the pupils with a view towards a better redivision, but rather to model the instruction on the needs of the children whom the accident of grouping entrusted to her (girls from 12 to 15 years). For this it was first necessary to establish and to make permanent a close contact with each child, and this by appropriate pedagogical techniques; thus allowing her continually to adjust her teaching to the progress of each. This enabled her to secure for the better ones sufficient recognition to keep them active, and on the other hand to adjust herself to the slower progress of the others, thus carrying on a continual adjustment. The work has three parts: (1) how one makes acquaintance with the real child and with the pupil; (2) how we work in class (revision of programs, new lessons, collaboration of pupils, a system of rational notation); (3) progress and changes. Conclusion: One must study the child before teaching him, in order better to adapt the instruction to his needs. It is therefore to a class conducted according to the methods of experimental pedagogy and in which the child is really the living center that the author introduces us. No bibliography.—*M. H. Piéron* (Sorbonne).

1201. Rogers, A. L. *A study of the causes of elimination in a college of liberal arts for women*. *Stud. Educ.*, 1926, No. 15, 172-186.—It is not possible, through the examination of the data, to explain the heavy elimination from college as due to lower mental capacity, financial status, poor health, or poor preparation, although these are shown to be factors. The key seems to be that interest is not sufficiently great to hold the student for four years. It would seem that there is need for a college for women in which requirements are related to present and future interests.—*T. F. Hunt* (Clark).

1202. Ruediger, W. C. *The academic major in schools of education compared with the major in liberal arts colleges*. *Stud. Educ.*, 1926, No. 15, 50-55.—Table supplemented by discussion comparing the requirements as to majors and minors in the colleges of education and those of liberal arts of 33 representative universities and colleges.—*T. F. Hunt* (Clark).

1203. Shrubsall, F. C. *The educational adaptation of the individual child*. *J. Ment. Sci.*, 1926, 72, 523-533.—A recital of the educational program in the County of London, where the system is elastic enough to allow modification for any special individual need. "From the infant school onwards there is a graduated ladder leading to the University, commerce, trade or industry, on the one hand, for those capable of deriving normal profit from education, or to specialized occupations for those suffering from physical or mental handicaps." An attempt is made to develop mind and body alike for citizenship. The work provides for medical inspection and also for the social welfare of the children. One of the most difficult problems has been that of the disposition of juvenile sufferers from encephalitis lethargica sequelae, but at present they are provided for in an institution.—*E. F. Symmes* (Yale).

1204. Swift, F. F. *Apportionment of state school funds*. *Stud. Educ.*, 1926, No. 15, 95-103.—Tables and summary of provisions in various states looking toward the equalization of educational opportunity and the equitable distribution of costs by means of state aid. States are grouped according to plans used in apportioning state funds.—*T. F. Hunt* (Clark).

1205. Symonds, P. M., & Penney, E. M. *The increasing of English vocabulary in the English class*. *J. Educ. Res.*, 1927, 15, 93-103.—Experimental results with a class in the Horace Mann School which had 15 members. Control group of 15 took the test at the beginning and end of the experiment. The Thorndike Test of Word Knowledge was employed, and a new test was devised

for ability to recall rather than recognize words. This involved 100 completion sentences. The test group were given intensive vocabulary training over a period of 4 months. "The score of the practice group was increased 6.9 words per hundred, whereas that of the control group had increased but 2.2 words per hundred. The gain of the practice group is greater than that made by a class studying Latin for two years as previously tested by Thorndike."—*S. W. Fernberger* (Pennsylvania).

1206. **Taylor, J. S.** *Inconsistencies in the present attitude toward grammar.* *School & Soc.*, 1927, **25**, 239-244.—The author comments upon the disparity between the findings of recent researches and the earlier opinions in regard to the uselessness of grammar; as well as upon the inconsistency between the older doctrines regarding the rational immaturity of grade-school children and the newer practices which stress the rational approach to most school subjects.—*H. L. Koch* (Texas).

1207. **Thompson, L. L., & Obrien, F. P.** *Student activities in the small high school.* *School & Soc.*, 1927, **25**, 318-320.—A review is given of the studies by Swanson and by Brown upon the mental level and grades of participants and non-participants in extra-curricular activities in large and medium-sized high schools. New data upon these same relationships in the small high school—i.e., with an enrollment not above 141—are presented. The results indicate that participants in athletics, both girls and boys, rank higher scholastically than do the non-participants. The intelligence-test performance of the two groups seems to be about equal, a fact somewhat at variance with Swanson's finding that the active group was the more highly selected mentally. Both Brown and Swanson observe, however, the correlation described above between grades and student activities.—*H. L. Koch* (Texas).

1208. **Toops, H. A.** *The prediction of scholastic success in college.* *School & Soc.*, 1927, **25**, 265-268.—The Ohio College Association, which includes 40 colleges, is at present engaged in intensive research on the problems of college entrance. One of its studies—namely, that of measuring the efficiency of study habits—Toops describes in rather general terms. The program he attempts is that of the measurement of the following: (1) speed of reading unrelated materials; (2) speed of reading related materials; (3) speed of comprehension in reading; (4) ability to take notes; (5) knowledge of foreign words and of abbreviations frequently appearing in texts; (6) ability to determine the relevancy and the relative importance of statements in a paragraph; (7) academic interest; (8) amount of reading done which is incidental to assignments; (9) personal idiosyncrasies in reading, such as habits of skipping statistical tables, graphs, material containing formulae, etc.; and (10) general study habits. His tests were selected on the basis of their reliability, their high correlation with scholarship, and their low correlation with intelligence-test scores.—*H. L. Koch* (Texas).

1209. **Winter, J. E.** *The psychology of freshman rules.* *School & Soc.*, 1927, **25**, 323-326.—The author considers the nature, agencies and method of enforcement, and motivation of the rules concerning the campus conduct and dress of freshmen in 42 universities and colleges with an enrollment of over 1000 students each. While a fair percentage of the regulations are commendable, many, either because of their inherent nature or the method of their administration, are clearly provocative of attitudes of resentment, disgust, inferiority, and self-defense. It is evident that these rules are in part responsible for class conflicts and for much social maladjustment among freshmen.—*H. L. Koch* (Texas).

1210. **Woody, C.** The evaluation of two methods of teaching spelling. *Stud. Educ.*, 1926, No. 15, 155-171.—Experiment conducted in public schools of Adrian, Michigan. Material used was taken from the Iowa Spelling Scale. One group of students, the control group, was taught by the traditional method, the experimental group by a variation of the test and study method. Results of the experiment do not justify the assertion of the superiority of either method over the other.—*T. F. Hunt* (Clark).

[See also abstracts 1149, 1158, 1165, 1174, 1217, 1219, 1223, 1224.]

BIOMETRY AND STATISTICS

1211. **Clements, F. E., Schenck, S. M., & Brown, T. K.** A new method for showing objective relationships. *Amer. Anthrop.*, 1926, 28, 585-604.—For some years there has been a growing need of more exact methods for treating cultural data. New theories and concepts as well as careful field studies have modified views of cultural processes, and tended to render ethnology constantly more objective. In the interest of further refinement of method, the authors offer a number of new suggestions for the arrangement and statistical treatment of ethnological materials, basing the study on tabulated data from various Polynesian groups. Tables of cultural features, methods of reduction to statistically comparable units, and formulas for the evaluation of the significance of such features are presented. The outlines of the authors' interpretation are exhibited in graphic form.—*C. M. Diserens* (Cincinnati).

1212. **Edgerton, H. A.** An abac for finding the standard error of a proportion and the standard error of the difference of proportions. *J. Educ. Psychol.*, 1927, 18, 127-128.—Directions are given for using the abac whereby one can find the standard error of a proportion and the standard error of the difference of proportions by knowing only the two percentages or proportions to be compared.—*A. M. Jordan* (North Carolina).

1213. **Ettlinger, H. J.** A curve of growth designed to represent the learning process. *J. Exper. Psychol.*, 1926, 9, 409-414.—A mathematical article intended to show the close relationship between Thurstone's empirical hyperbolic equation for the learning process (*Psychol. Monog.*, No. 114, 1919, 26) and the growth curve, or exponential law. The hyperbolic curve may be considered a first-order approximation of the growth curve.—*F. A. Pattie* (Harvard).

1214. **Furfey, P. H.** A formula for correlating interchangeable variables. *J. Educ. Psychol.*, 1927, 18, 122-124.—A formula is derived which will apply to correlations, e.g., between sibs or twins, when it is impossible to determine which is the *x*-variate and which the *y*-variate. By writing each pair of scores twice, first with one score then with the other score as the *x*-variable, it is possible to obtain random arrangement.—*A. M. Jordan* (North Carolina).

1215. **Slocombe, C. S.** The Spearman prophecy formula. *J. Educ. Psychol.*, 1927, 18, 125-126.—The over-prediction occurring in the use of the Spearman prophecy formula in several investigations is probably due to the presence of systematic changes in the repetition of test forms, i.e., to practice. When sampling coefficients we must use either random sampling or first and last, second and next to the last, etc., and not first and second, third and fourth, etc.—*A. M. Jordan* (North Carolina).

1216. **Thurstone, L. L.** The method of paired comparisons for social values. *J. Abn. & Soc. Psychol.*, 1927, 4, 384-400.—This is an attempt to extend some of the ideas of psychophysical measurement to the field of social values, taking the seriousness of different crimes as data for measurement. Using the method of

paired comparisons, although "not without making compromises that the psychophysicist would not tolerate," it is shown that qualitative judgments of a rather intangible sort are amenable to the type of quantitative analysis which is historically associated with psychophysics. The scale values of the offenses are represented graphically, and tables are given summarizing the experimental data.—*E. N. Brush* (Boston Psychopathic Hospital).

MENTAL TESTS

1217. **Bird, C.** *The detection of cheating in objective examinations.* *School & Soc.*, 1927, **25**, 261-262.—In an objective examination composed of 24 multiple-choice questions, 17 analogies, 23 matching, and 85 completions the average number of identical errors occurring in the papers of a class of 100 members was $4.35 \pm .16$. The range of the distribution of identical errors was 0 to 12; the S.D., 2.38. Four individuals who were known to have cheated on the examination showed in their papers identical errors to the extent of 17, 25, 28, and 31 respectively, the first individual having been removed from his point of vantage for cheating after taking about 2/3 of the test. Although granting that the type of objective examination and the nature of the subject matter covered in each question may influence results, the author contends that the detection of dishonesty in objective examinations is not the difficult matter it is usually alleged to be.—*H. L. Koch* (Texas).

1218. **Broom, E.** *Constancy of the I.Q.* *School & Soc.*, 1927, **25**, 295-296.—50 senior high school students were tested twice by the Terman Group Test of Mental Ability, the interval between test and retest ranging from 6 to 23 months. The maximal change in the I.Q.'s was 13 points; the median, about 5. The degree of change in the I.Q. and the size of the interval occurring between test and retest seem not to be correlated.—*H. L. Koch* (Texas).

1219. **English, H. B.** *Freshman intelligence tests at Wesleyan.* *Wesleyan University Alumnus*, 1927, **11**, 169-171.—In 1925 the freshman class at Wesleyan was given the intelligence test issued by the American Council of Education (1925 ed.). Of those rating E in the test only one-fifth finished the year satisfactorily. 25 per cent. of those who did poor, and 4 per cent. of those who did good academic work had low ratings. In the rank-order of the several social groups the difference slightly favored the independents as against the fraternities. A comparison was made with scores obtained on the test by students from 11 other colleges.—*M. Goodrie* (Clark).

1220. **Gilmore, M. E.** *Coaching for intelligence tests.* *J. Educ. Psychol.*, 1927, **18**, 119-121.—32 students were first tested on the Otis Intelligence Test, then coached for 12 weeks on material similar to but not identical with the Otis material, and finally tested again on Otis. A parallel group of equal numbers took the two Otis tests but were not coached. The average gain of the first group was 18.56 per cent.; of the second, 9.02 per cent.—*A. M. Jordan* (North Carolina).

1221. **Hull, C. L.** *Variability in amount of different traits possessed by the individual.* *J. Educ. Psychol.*, 1927, **18**, 97-106.—Investigators have been busy measuring the amount of differences existing among individuals in a single trait, but they have failed to concern themselves with the varying amounts of several traits possessed by the same individual. 107 first year high school pupils were tested on 35 different traits, so that the variability of each pupil in these could be measured. By means of his own formula the author transmuted all the scores into equivalent scores with a mean at 81 and an S.D. of 7. Graphs show that the distribution of traits within the individual approximates the normal curve.

Furthermore, the variation of traits within the individual in the case of 35 traits is about 80 per cent. as great as the variability of the 107 pupils in one trait. Finally, there is a marked difference among individuals in their trait variability, a difference of 111% from the smallest to the greatest.—*A. M. Jordan* (North Carolina).

1222. **Micheal, W., & Crawford, C. C.** **An experiment in judging intelligence by the voice.** *J. Educ. Psychol.*, 1927, **18**, 107–114.—9 voice qualities (inflection, normal quality, pitch accuracy, key sense, force sense, enunciation, rate and phrasing, accompanying physical activity, use of language) of 56 students were rated by a teacher of public speaking. The Thurstone Intelligence Test scores and school marks were available for each pupil. The correlation of each voice quality with every other, of each voice quality with intelligence score, and of each voice quality with school marks was computed. The coefficients between voice qualities ranged from $-.09$ to $.68$; between voice qualities and school marks from $-.47$ to $.60$, and between voice qualities and intelligence scores from $-.46$ to $.70$. Inflection alone correlated with scholarship $.47$ and with intelligence $.34$. Intelligence and inflection optimally combined gave an r of $.60$ with scholarship.—*A. M. Jordan* (North Carolina).

1223. **Walters, F. C.** **Psychological tests in Porto Rico.** *School & Soc.*, 1927, **25**, 231–233.—Psychological tests, constructed by the Psychology Department at the University of Porto Rico and consisting of both English and Spanish materials, were given to high-school seniors and tenth-grade continuation-school pupils in 19 cities of Porto Rico. A very marked inequality in the various schools was discovered. The Stanford Achievement Test and the Thorndike Intelligence Examination for High-School Graduates, Part I, were demonstrated to be unsatisfactory for predicting the academic success of the students at the University of Porto Rico, since an r of only $.24$ was obtained between scores on these tests and grades. Correlations between the marks of university students in English, Spanish, and mathematics in successive years or semesters were relatively low, $.35$ to $.62$. Hence, even the value of school grades in the prediction of subsequent scholarship is questioned.—*H. L. Koch* (Texas).

1224. **Whipple, G. M.** **Sex differences in intelligence-test scores in the elementary school.** *J. Educ. Res.*, 1927, **15**, 111–117.—Two tests were given. The National Intelligence Test, Scale A, was given to 1071 boys and 1127 girls at Flint, Jackson, Kansas City and Lafayette. In each of the four cities the median score for the girls is higher than that for the boys. This operates throughout the distribution, inasmuch as the extreme scores are the same for the two sexes and the girls' scores are higher than those for boys at all other deciles. "The sex difference at the median amounts for this entire group to 9 points. Since at this age the yearly increment of score is 15 points, it follows that the median eleven-year-old girl attains a score in the National Intelligence Test which indicates a grade of mental maturity approximately seven months in advance of the boys of the same age." The Illinois General Intelligence Test was also given to 1919 pupils at Bloomington and 582 pupils at Indianapolis. Again the median scores of the girls are in excess of those of boys for all ages from 8 to 13 years.—*S. W. Fernberger* (Pennsylvania).

[See also abstracts 1022, 1136, 1148, 1163, 1164, 1168, 1170, 1208.]

